PHILADELPHIA MEDICAL TIMES.

PHILADELPHIA, JULY 11, 1885.

ORIGINAL LECTURES.

CLINICAL LECTURE

ON ARTERIAL EMBOLISM OF THE BRAIN.

Delivered at the Hospital of the Medico-Chirurgical College of Philadelphia

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GENTLEMEN,—The patient sitting before you, Chas. K., æt. 34, is a man in the prime of his age, of robust build, and apparently healthy. You will notice, as he gets up and walks around, a peculiarity in his step: he limps with his right leg. An examination with the dynamometer reveals the fact that his right arm also is affected: it is capable of exerting only half as much muscular power as the left, although the patient has always been right-handed. The cause of his limping with the right leg is, as he says, because he has in it a sensation of numbness, heaviness, and weakness. We have, therefore, here a case of hemiparesis. You will observe that there is no muscular atrophy, and, on testing electro-cutaneous sensibility and electro-muscular contractility, we find both normal in the affected extremities.

These facts point to a central nervous lesion, for, as you are aware, the pathological condition, in cases where hemiplegia or hemiparesis (the latter simply being a milder degree of paralysis, not so complete a palsy as the former) exists for some length of time without wasting of the tissues, and without any diminution in the electrical reaction, has its seat in the brain.

Three morbid states especially may give rise to hemiplegia of any duration. I purposely add "of any duration," for though at least in one of these conditions the hemiplegia may also rapidly disappear, this, as a rule, is characteristic of a fourth pathological state, which I do not care at present to discuss,—viz., hyperæmia of the brain. Severe attacks of cerebral congestion, if accompanied—as those of a high degree are apt to be—by capillary hemorrhage, also induce paralysis of one side of the body; but the palsy in such cases is so transient that it has generally disappeared ere the physician's arrival at the patient's house. As I said, there are but three morbid states to which the paresis could be ascribed in this case,—cerebral hemorrhage, embolism, and thrombosis. In the first, due to a diseased condition of the walls of the blood-vessels, giving rise to the formation of minute aneurisms, the affected blood-vessels burst, and the blood pours out, in smaller or larger quantity, over the neighboring brain-tissue; in the second, some solid particle enters the circulation in one of the ways characteristic of the formation of emboli, and is carried along until, reaching a blood-vessel whose calibre is too small to allow it to pass, it occludes the vessel; and in the third, a peculiar diathesis, producing a tendency to inflammation in the inner coat of blood-vessels and an inclination of the blood to coagulate, causes such a formation at the seat of the occlusion.

Before I endeavor to determine which of these three pathological conditions has caused the hemiparesis in this case, let me draw your attention to the main points in the differential diagnosis of these three lesions. I wish first, however, to remind you of the fact that there is not a single pathognomonic symptom characteristic of any of the three. Any sign usually met with in hemorrhage may be present in obstruction of cerebral vessels, whether the impediment be due to an embolus or to a thrombus, and any symptom frequently noticed in cases of obstruction may be the main—nay, the only—phenomenon in a case of hemorrhage. It was formerly taught—not so long since—that the so-called classical apoplectic attack (complete coma, stertorous breathing, etc.) always indicated cerebral hemorrhage, and that a permanent impairment of the mental faculties, if following the seizure, excluded hemorrhage and proved the existence of what was then termed softening. To-day we know that the group of symptoms formerly considered as belonging to the apoplectic seizure may be absent in hemorrhage, even if so abundant and severe as to cause the destruction of one whole hemisphere, and that it does not occur in full one-half of all the cases of cerebral hemorrhage, while it may be present in capillary hem-

orrhage, in embolism, in thrombosis, in opium-poisoning, and in several other diseases. With regard to the disturbance of mental faculties, modern science teaches that in no case, no matter how slight, of cerebral hemorrhage is this totally wanting; often it extends to complete imbecility, while in *softening*, now acknowledged almost always to be due to occlusion of cerebral vessels, the intellect may not at all suffer.

It is therefore no single symptom which can aid you in the diagnosis of any of the three cerebral maladies in question: it rather is the grouping of symptoms, each one of which may be present or absent in all three diseases. And ere you can be certain of the diagnosis, you must demonstrate to your satisfaction the presence of *all* the phenomena, of *all* the elements, that I am about to enumerate; but even then you may be mistaken, even then you will often have to console yourself with the old but only too true adage, "*Errare est humanum.*" Still, the following points will frequently be of great service to you, and, as a general rule, you will not be wrong in establishing your diagnosis upon their presence.

Cerebral hemorrhage is possible only when the walls of the arterioles are diseased and have become the seat of minute aneurisms. It is therefore a malady of advanced age, and is especially met with from the fortieth to the sixtieth year. After this period of life the tendency to the formation of minute aneurisms, and therefore to hemorrhage, again diminishes, as the ossification of the walls of the vessels, so characteristic of the last decades of individual human existence, prevents the yielding of the tissues. An attack of hemorrhage is always accompanied by a lowering of the temperature, 97° Fahr. being the usual record. Complete coma and stertorous respiration are present in about one-half of the cases. If death does not at once occur, after reaction has been established a period of inflammation follows, generally lasting only from one to three days. During this time there are to be observed more or less fever and increased temperature. At the end of this period the real injury becomes apparent, and hemiplegia, though visible during the seizure, can be unmistakably determined with reference to its limits, this form of paralysis being the most common, and one from which the patient may recover more or less completely. Intelligence and reason may or may not be greatly disturbed, and often the individual attacked never recovers his former mental powers. In such cases atrophy of the brain is the morbid state responsible for this deterioration of the mental functions. In cases where, due to a descending degeneration in the motor tract, permanent paralysis results from cerebral hemorrhage, contractures and rigidity are apt to make their appearance later, when the paralysis has become chronic.

Arterial embolism of the brain may happen at any age. This is of importance to know, as the fact also is worth remembering that embolism is specially frequent in young adults between the ages of 20 and 40,—at a period of time, therefore, when cerebral hemorrhage almost never occurs. Further, as a rule, the symptoms of obstruction of a cerebral artery by an embolus set in with lightning-like rapidity; warnings are rare. The attack may present the complete picture of the classical apoplectic seizure; there may be perfect coma and stertorous breathing, or these symptoms may be utterly absent. But when present they rapidly disappear; they never remain so long as, when present, they do in cerebral hemorrhage; the celerity with which they vanish is similar to that observed with regard to these symptoms in cases of cerebral hyperæmia accompanied by capillary hemorrhage. But, whether they are present or absent, the attack is characterized by a sudden stroke of palsy, which is seldom wanting. The paralysis usually assumes the form of right-sided hemiplegia, and aphasia is a symptom most frequently accompanying the stroke. This frequency in the occurrence of right-sided hemiplegia and of aphasia is due to the fact that the passage along the left internal carotid and up the Sylvian artery of the same side—the direct prolongation of the carotid—is the shortest and most direct road for an embolus from the heart to take. Then there must be present in the system a cause accounting for the formation of an embolus. In the majority of cases this is an organic valvular lesion of the heart, and vegetations or other morbid changes of the aortic semilunar valves probably give rise most frequently to such emboli. Occasionally also a heart-clot, being broken up, its torn

shreds carried along by the circulation, is responsible for the formation of an embolus. Particles of cancerous growth, especially when this is situated in the lung, may also enter the circulation, pass through the heart, and finally occlude a cerebral artery for whose calibre they are too large. A thrombus may thus produce embolism.

All these facts greatly assist in the diagnosis, and when, as often is the case, there is evidence of the existence of an embolus somewhere else in the organism, in some other blood-vessel in the body, the diagnosis of cerebral embolism becomes a certainty. But we should never forget that an individual suffering from an organic valvular lesion of the heart may also have an attack of cerebral hemorrhage. In such doubtful cases the temperature-record may be of assistance. In embolism the temperature generally ascends at once, and may reach a very high degree, while in hemorrhage, at least while the acute attack lasts, the thermometer always records a decline, and shows the normal height only just before reaction, or, in some very rare cases, a very great increase immediately before death. But under these circumstances a mild delirium is apt to accompany the increase in temperature.

Yet, if we remember that any or all of the symptoms met with in cerebral embolism or in hemorrhage of the brain may be present or absent in either of the two diseases, you will admit that a differential diagnosis at times is impossible. Should, however, a patient, having had a sudden and well-developed stroke of right hemiplegia, recover the full use of his limbs within two or three days, the suspicion before existing, that an embolus caused the paralysis, becomes a certainty, for there is no case on record where such a paralysis, following an attack of cerebral hemorrhage, had thus rapidly and completely disappeared, while in hyperæmia it vanishes as quickly as it came.

With reference to *thrombosis*, the diagnosis often is even more difficult. Still, as a rule, the following points, if present, will enable you to recognize the presence of a thrombus in a cerebral sinus. Certainly an embolus, as well as a thrombus, may obstruct an artery, a vein, or a capillary vessel; but I refer in this lecture only to arterial embolism and venous thrombosis, because these two are by far the most frequent forms of obstruction in the brain,* and because the consideration of the other varieties would make the subject too complicated.

When a patient, suffering from any of the causes which give rise to thrombosis,—as an injury to the head, caries of the internal ear, furuncles in the face or neck, bone-disease of the lower extremities or chronic ulceration of the same, phlebitis, etc.,—is seized with pyæmic symptoms, to which a marked disturbance of the cerebral functions becomes added, the supposition of a purulent inflammation of a cerebral sinus, leading to its occlusion, is warranted.† And if the external veins, which are in connection with the diseased sinus, evince the disturbance of circulation, the œdema, characteristic of such cases, the existence of cerebral thrombosis may be considered established beyond a doubt. It is well also to remember that the symptoms of a thrombus, like its formations, only gradually develop themselves, and thus indicate a point of differential diagnosis between thrombosis and embolism. Thrombosis accompanying cases of hydrencephaloid—the so-called thrombus of marasmus—cannot be positively determined, but the œdema of the forehead, formerly considered pathognomonic of certain forms of meningitis, generally is an indication of the occlusion of the longitudinal sinus by an inflammatory process. Thrombosis may develop at any age, but a peculiar change of the blood, as present in various cachexias and in some states of extreme debility, and feebleness of the heart's action, are the conditions most favorable to the formation of a thrombus.

After having thus explained to you the difficulty in the diagnosis of cerebral hemorrhage, embolism, and thrombosis, and having indicated to you the points which may guide you, I will apply the knowledge thus obtained in the endeavor to discover the lesion which has given rise to the complaint of our patient. I have already given you my reasons for considering the seat of the morbid lesion to be in the brain. The question remains, What is that condition?

I will now institute a careful inquiry into the history of the case. The patient informs me that he cannot give me a cor-

* Perhaps excepting capillary obstruction (by pigment) in chronic malaria.

† Ziemssen's Encyclop., Nothnagel, art. Brain, vol. xii.

rect description of his former life, as his memory has greatly deteriorated since his present illness. It is well, gentlemen, to make a note of this fact. His wife, who is present, states that she can impart to us the desired information.

Chas. K. had but few diseases in childhood. When a little over 21 years of age he married. At that time he was physically the picture of health. When 24 years of age,—ten years, therefore, ago,—he was attacked by acute articular rheumatism. When suffering about a week from this painful malady he was suddenly seized with an intense pain in the chest, difficulty of breathing, and a sensation as of impending dissolution. At the same time he became delirious. The doctor attending him pronounced the attack a heart-complication. It probably was endocarditis; for this disease, while frequently complicating the rheumatic malady, often simulates cerebral lesions. I have seen cases where the symptoms of the heart-complication were totally kept in the background, while the phenomena present seemed to indicate meningitis, or, in other cases, acute gastric catarrh.

But, to continue the history, the patient never completely recovered from this acute illness. He has since often suffered from dyspnœa, palpitation, and dyspepsia, besides frequent attacks of giddiness; but no other acute disease developed itself until about a month ago, when his present complaint began.

At that time, one day while at dinner, the patient had a peculiar tingling sensation, which suddenly attacked his right arm: the extremity felt as if fallen asleep. Soon after he experienced stiffness in the arm: it felt cold, and assumed a blanched look. Being frightened, the patient sent for a doctor, who, when searching for the radial pulse on that arm, discovered its absence. K.'s wife specially remembers this fact, as the physician at that time took pains to determine by inquiry whether this absence of right-sided radial pulsation was an anomaly known to K. The doctor admitted his ignorance regarding the morbid symptoms concerning the arm, but I shall later explain them to you. However, he instituted proper treatment, and by the following morning all pathological phenomena had left, with the exception of a slight stiffness, which yielded during the course of the next twenty-four hours.

But two days after the occurrence just mentioned the patient once more was about to sit down for his noonday meal, when a tingling sensation similar to that which two days before had attacked the right arm suddenly seized the whole right half of his body and just as suddenly left, but only to return the very next moment. At the same time, as he later told his wife, he felt as if a shock from an electrical machine was passing through the right side of his body, but scarcely had he been aware of this sensation when he lost all recollection of himself. His wife, however, who just then was placing a dish on the table, noticed that he slowly glided down the chair and then fell prostrate to the floor. She was greatly alarmed, but impulsively took hold of a glass filled with water and threw its contents in his face,—probably the very best thing that she could have done under the circumstances. In an instant he came to, and she aided him to a lounge. When he regained consciousness, which he had momentarily lost, he felt confused for a long time, and afterwards, when he tried to explain to his wife what had happened to him, though he felt as if he could do so, he could not find the words; he had lost the memory of articulate language. On the physician's arrival, the patient's inability to talk being discovered, K. was asked to write down his sensations, when it was noticed that he could not do it, the memory of the symbolic signs for writing having disappeared, as well as that of articulate language. Slowly, however, the faculty of speech and of writing returned, and by the end of the first week he could once more express himself both ways, although not quite so well as formerly. Certainly by saying "not quite so well" I refer only to the mental act, and not to the hieroglyphs which, instead of letters, he produced in the beginning with his left hand, on account of the motor paralysis in the right arm. He also made the observation that his memory had greatly suffered by the attack, and that he had lost the use of his right arm and leg. His wife says that during the attack and for about a day longer the left side of his face had looked as if contorted by grimaces. This was probably due to the fact of the right side of his face being paralyzed. Let me here tell you that the mistake is often made, in these cases, of considering the healthy side the affected

one, for the paralyzed side appears smooth, while the normal half seems distorted from the augmented play of its muscles, they being held in check no longer by their antagonists on the opposite side.

The facial palsy, therefore, if it existed, rapidly passed off; the paralysis of the extremities also slowly improved, but has never totally disappeared, as you may still notice the impediment in their muscular actions, of which I gave you a proof in the beginning of the hour.

The history is complete, and it alone enables the physician to diagnosticate the disease beyond a doubt. Let us once more enumerate the main symptoms as they appeared, and group them together in such a manner as at once to guide you to the correct diagnosis. But to complete all the elements in the case, a physical examination will be necessary.

I find the cardiac apex impulse visible outside the mammary line, nearly reaching to the axillary and as low down as the seventh rib; during systole the whole region of the heart is raised. These signs of excited circulation are also noticeable in the large blood-vessels of the neck. Placing my hand over the cardiac region, I feel a distinct vibration mainly over the aortic valves. On percussion, I find the area of dulness greatly increased in all directions, beginning in the second interspace and extending downwards to the seventh rib; it passes over the mammary line nearly two inches on the left side, while on the right of the sternum the dulness is also clearly demonstrable. While percussing, I also detect dulness over the manubrium sterni. This is caused by the dilatation of the arch of the aorta, so frequently noticed in these cases. But although the impulse is increased in strength, it has not quite the heaving characteristic of the earlier stages of valvular lesions. Considering the area of dulness, the impulse and the pulse at the wrist, which latter does not at all correspond to the strength of the *choc*, we are entitled to make the diagnosis of dilated hypertrophy, as far as concerns the muscle of the organ. The hypertrophy therefore commences, in this case, to cease to be compensating; the organ has entered upon the stage of exhaustion, which, if the individual live long enough, is bound sooner or later to attack the heart suffering from valvular lesions. Auscultating the organ, there is plainly perceivable a murmur with its point of greatest intensity at the base, and appearing during diastole. It is clearest and loudest at the right side of the sternum, near the junction of that bone with the third rib. This murmur is propagated along the aorta, and, placing the stethoscope at the back near the left scapula, the murmur becomes even more distinct than anteriorly. The first sound of the heart is clear, but short. A murmur is also heard over the carotids.

The diagnosis, therefore, of the heart-disease is regurgitation of the semilunar valves of the aorta. One more evidence in its favor is the condition of the radial pulse: you feel that the artery, scarcely filled by the blood-current, again becomes empty by the receding wave. This pulse is called by the French, after the physician who first minutely described it, *pouls de Corrigan*.

We have here a patient suffering with aortic insufficiency. There is therefore present one of the causes which may give rise to an embolus. Besides, the original complaint has been in existence for many years, and the heart has reached that debilitated state which, if combined with a morbid condition of a valve, and especially of the aortic, is prone still more to favor the development of a clot (vegetations) on the valve, and to produce emboli; but they do so more during the earlier stages of the compensating hypertrophy, when the greatly-increased force of the circulation at times tears off one of these vegetations and carries it forward.

The clinical history is as follows. The patient, suffering with one of the causes inducing embolism, one day is suddenly seized with symptoms denoting the occlusion of the main artery in his right arm. These phenomena, however, rapidly disappeared,—a proof, to me, that the occlusion itself was caused by a coagulum easy of absorption. For there is no evidence of a collateral circulation having been established while the subclavian or the axillary artery was occluded; on the contrary, the history of the case points to a sudden stoppage of the onward flow of the arterial blood, and to the removal, a few hours later, of the impediment which had caused the obstruction.

Two days later the patient is again seized by an attack indicating a sudden interference with the circulation, but this

time the impediment lodged in the brain. He still is young, having not yet reached his fortieth year. He becomes unconscious, but this loss of consciousness is only momentary, and when he regains it he discovers that he is paralyzed on the right side of his body, and that he suffers from aphasia and agraphia, and from impairment of his mental faculties. The symptoms refer the lesion to the left cerebral hemisphere, and there to a district supplied with arterial blood by the Sylvian artery of that side. This group of symptoms is the one most common in cerebral embolism, as, for reasons mentioned at the beginning of this lecture, an embolus coming from the heart is generally apt to travel up the shortest and most direct path, and, following the course of the left common carotid, passes up the left internal carotid, and finally occludes the Sylvian artery—the direct prolongation of the carotid—or one of its final branches.

Some of the symptoms rapidly disappeared, while others, after the lapse of four weeks, still continue, although in a milder degree. From what I first told you, there is no doubt that the attack was due to arterial embolism in the left cerebral hemisphere. Let us now look for a moment at the various morbid conditions which may develop in a case of embolism of this kind in the district whose arterial blood-supply has been cut off by the occlusion.

What used to be considered softening of the brain due to inflammation we now believe to be the consequence of occlusion of cerebral vessels, either by an embolus or by a thrombus. Three forms of softening, the white, yellow, and red, were formerly recognized, and many conflicting explanations of the circumstances were given under which each of these states developed itself. Our present knowledge enables us to give a more lucid and correct explanation.

If a cerebral artery be suddenly occluded by an embolus, one of three conditions will set in, if the collateral circulation be not so rapidly established as to cause the disturbance to pass off without having produced any morbid change. The conditions are the following:

1. The instant the artery is occluded, the circulation in the district involved at once comes to a stand-still, and complete anæmia develops itself, followed by simple necrobiosis of the parts, which become degenerated, undergo the usual retrograde metamorphosis, and are finally absorbed, or a cyst forms very similar to the one often observed as one of the ultimate sequelæ of cerebral hemorrhage. Or,—

2. As soon as the embolus closes up the artery, the blood contained in the latter flows back to the next open branch, and is thence carried along by the circulation and brought directly to the main vein of the district, where it stems the downward current of the venous blood, and thus a condition of venous hyperæmia is produced. If, then, the individual lives longer, the congestion gradually ceases by absorption; the affected district assumes a paler hue, and in that condition resembles that at once developing in the state of anæmia first described. It also ultimately undergoes the same retrograde metamorphosis mentioned as taking place in the first instant.

If anæmia followed by necrobiosis sets in, the brain has a blanched appearance. It is the state formerly called *white* softening. When venous hyperæmia attacks the district deprived of its supply of arterial blood, the brain has a yellowish look, corresponding to the former *yellow* softening. When, in consequence of absorption, the morbid tissue passes from the condition of venous hyperæmia into that immediately induced in anæmia, it also assumes a whitish tint, and then also presents what has been described as *white* softening. The latter may, therefore, be the morbid alteration at once developing in cases of arterial embolism, or it may be the second stage of venous hyperæmia or yellow softening.

3. In cases where the circulation is still more active, where the force of the blood-current is still greater, immediately after the occlusion of the artery by an embolus the blood in the obstructed vessel, following the law of gravity and the suction-power exerted by the force of the current passing along the next open branch, flows backward to that branch, and thence also directly passes over into the main vein of the district. But the force with which it is propelled is so great that, arrived in the vein, this arterial blood not only stems the downward venous current, but drives it back, and the now mixed arterial and venous blood performs a retrograde motion in the main vein, which return-movement continues

until the equilibrium of circulation is re-established,—*i.e.*, until the blood-pressure is the same as that of the healthy neighboring parts. In consequence, however, of this forced backward flow an intense hyperæmia develops itself,—so intense that the walls of the capillaries yield, and capillary hemorrhage complicates the congestion. It was this presence of the extravasated blood-corpuscles which once gave rise to the erroneous idea of inflammation as the cause of this softening. The affected district in this condition presents a more or less dark reddish hue, corresponding to what used to be termed *red* softening. If death does not at once take place, the coloring-matter of the blood is gradually absorbed and the tissues assume a yellowish look,—they enter upon the state of yellow softening; and if the individual live long enough, the same condition as described in anæmia and as mentioned as the second stage of yellow softening—viz., white softening—ultimately develops itself, to be finally followed by the same subsequent retrograde metamorphosis that I explained to you as the last consequence of the anæmic state.

To use old, familiar terms, whose synonymes in modern pathology you now know, we have in arterial embolism of the brain either white softening or yellow, followed by white, or red, succeeded first by yellow and then by white softening; and, if the individual live long enough, in all these cases ultimately the usual retrograde metamorphosis which is the sequel of long-continued anæmia.

The later symptoms of cerebral embolism will depend altogether upon the artery occluded and upon the morbid changes developing in the affected district. As a natural consequence of the fact that the artery of the Sylvian fossa is most frequently the seat of an embolus, as also of the fact that, with rare exceptions, the districts deprived of their supply of arterial blood entirely lose their functions, disturbances of the mental faculties are the rule in cerebral embolism. But just as it was wrong to teach, as a point of differential diagnosis, the absence of mental decay in hemorrhage, it would be an error to assume that every case of occlusion of cerebral vessels must be followed by deterioration of the intellect. Some mental disturbance is always present in cerebral hemorrhage, and but few well-pronounced cases of this disease ever totally regain their former intellectual vigor, while in embolism cases are often observed where not the least mental disturbance happens. In hemorrhage the loss of intellect, often leading to imbecility, is due to cerebral atrophy; all cases of softening of the brain, with but few exceptions, are caused by occlusion of cerebral vessels produced either by emboli or by thrombi.

Regarding the prognosis in our patient, the collateral circulation was not at once established, but in the centres of speech it soon returned to the norm, though another explanation for the disappearance of the aphasia may be admitted. Some contend that in cases of this kind, when the centres of speech (or, indeed, the functions of any one district) on the left side are permanently destroyed, the same convolutions on the right side are capable of performing the duty of the injured parts. Whether this theory is correct or not I am not prepared to say. In our patient the injury in the motor sphere has evidently been of such a character as to produce a permanent lesion, for it is well known that if the paralysis due to cerebral embolism has not disappeared within four weeks after the acute attack, it will never totally pass off.

When speaking of the prognosis in this case, we must also not lose sight of another danger threatening our patient,—viz., that from fresh emboli. The underlying disease of the heart cannot be cured. The same circumstances, therefore, that have twice favored the formation of an embolus may again occur. To prevent them is probably impossible, and, to confess the truth, we are nearly as powerless to improve his present condition. The only chance to guard against the recurrence of such attacks, and to ameliorate the paresis and the slight mental deterioration at present existing, will be found in the strict attention to general hygienic rules. The patient should lead a very regular and quiet life: all his secretions and excretions ought to be scrupulously maintained, the diet be carefully regulated, and some tonic treatment be instituted. The heart must be specially watched, and any threatening debility be counteracted by the internal administration of digitalis and by judicious stimulation. Occasionally the carbonate of ammonia may be added to the digitalis.

Aside from its stimulating properties, it is said also to lessen the tendency of the blood to coagulate. Change of scene and climate—travelling, therefore—has often wonderfully improved the intellectual faculties in cases of this kind. The paresis will be best remedied by manipulation and Swedish gymnastics: at least I have seen in these cases a better result from massage than from electricity and hypodermic injections of strychnine, both often succeeding in establishing a cure in cases of paralysis due to other morbid lesions.

Baths and luxurious meals should be particularly avoided. There are many cases on record where, after a bath and during or immediately after a heavy dinner, cerebral embolism occurred. Anything tending to disturb the action of the heart, be it only an overloaded stomach, augments the danger already permanently existing.

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ORIGINAL COMMUNICATIONS.

REPORT ON THE PROGRESS OF NEUROLOGY.

BY G. BETTON MASSEY, M.D.

PROGRESS in a special field of medicine may be of two kinds: either the rescuing of a truth from chaotic confusion, or the general adoption of facts already established. For the appearances of the preliminary indications of an advance of the latter type neurologists have recent cause for congratulation. A distinguished gynæcologist has most openly avowed his conversion to the belief that a large proportion of gynæcological practice has to deal with

NEUROTIC MIMICRY OF UTERINE DISEASES.

In a recently-published clinical lecture,* Prof. Goodell acknowledges the failure of those ultra-local views of most cases of such affections as dysmenorrhœa, amenorrhœa, menorrhagia, granular erosion, intermenstrual ovaralgia, prolapsed ovaries, coccygodynia, etc., so widely distributed throughout gynæcological literature by the teachings of the school led by the late Marion Sims. So broad, indeed, is the departure of this favorite teacher from the surgical methods of treatment of these cases now so unfortunately prevalent, as the result of such pathological views, that he does not scruple to characterize them as a "moral rape," and adopts entire the views and methods generally known as having been introduced by Weir Mitchell. Neurologists look with satisfaction on this wholesome change in gynæcological practice, and can predict only good results as a consequence.

The general practitioner, especially, cannot too soon recognize the influence of the nervous system in the production of the symptoms often attributed to uterine disease. In the intimate and imponderable action and reaction of the mind and body it may be at times difficult to determine with certainty just where the trouble starts; but, start wherever it may,—in the digestive, the cerebral, or the nervo-sexual groups,—it is certain to involve the general nervous organization in a more or less profound functional distress before presenting the simulated symptoms of uterine disease.

It is clearly the duty of the true physician, when consulted, to probe deeply into this first cause (whether digestive, mental, sexual, or external to the individual), and, after ascertaining its true character, to secure its banishment if possible; but not the less is it then his duty to consider the nervous system of his patient as in need of repairs and to adopt positive measures of reparation.

Notwithstanding the considerable prevalence of the combined therapeutical measures known as the "rest-cure," but little has been added to the literature of the subject beyond the publications of the talented originator. It is undeniable, however, that current thought and investigation tend largely towards the centric theory of others than the class of nervous disturbances grouped around the convenient term neurasthenia, and farther away from the older views of nerve-perturbation from excentric irritation. That the average truth lies largely in a middle ground of belief will doubtless be conceded by many observers, especially those who possess frequent opportunities of therapeutically tracing different cases of an apparently similar character to totally different sources. The obvious conclusion is that we should be equally alive to the possibil-

* Medical News, December 6, 1884.

ity of our patient presenting a condition of general dystrophy traceable to the central nervous system, and thence to an individual or group of bodily organs acting as the original *fons et origo mali;* or, on the other hand, presenting a condition of general dystrophy with especially accentuated symptoms in some particular organ or organs, but entirely dependent on some unexplainable deviation or depression of the functional activity of the central nervous system. Under the latter circumstances, however, much mystery may at times be removed from the etiological question of the case by a careful inquiry into the habits of the individual in that broad sense which includes his whole relations to the external world. In ninety-nine cases in a hundred some failure will be found in his thorough adaptation to conditions which are presumed to be natural and proper because time-honored.

In connection with this subject it is interesting to note that the attention of another class of observers has recently been called to some facts that tend to show

THE NEUROTIC ORIGIN OF BRIGHT'S DISEASE.

Here, however, having very patent and positive pathological changes in the affected organs to explain, equally positive organic changes in the nerve-centres have been traced and a most reasonable causative relation suggested. The researches of Drs. Da Costa and Longstreth* on the state of the ganglionic centres in Bright's disease are not only most important contributions to the study of that affection, but point to similar possibilities in other diseases, of extreme value if established. These observers reported a careful microscopic examination of the renal ganglia in nine cases of more or less chronic nephritic disease. Decided changes were found in all, and the cases were, for convenience, divided into three groups.

In Group I. the most striking alterations of the ganglia were found, the two cases forming the group being also the most pronounced examples of the chronic contracted kidney. The microscopic appearances of the ganglia indicated fatty degeneration and atrophy of the ganglion-cells, with breaking down of their substance into granules and fatty globules, rendering the nucleus obscure. The connective-tissue substance of the ganglia had apparently passed through the active stage of hyperplasia, and was undergoing a contractile process similar to that usually seen in the kidney. The tissues outside the ganglionic masses showed a contraction of the same character, and there was unusual accumulation of fat in the neighborhood of both the ganglionic masses and the kidneys.

Group II., consisting of three cases of contracting kidney, showed a lessened amount of change both in the kidneys themselves and in the ganglia. The ganglionic cells were found markedly degenerated, but to a lessened degree as compared with the first group. The difference in the two groups was more pronounced, however, in the differing condition of the connective basis-substance of the ganglia. Here the appearances indicated a far more active hyperplasia of the connective tissue, which condition had evidently passed away in the first group.

Group III. was made up of four cases of a more acute type of catarrhal inflammation of the kidney. The changes in the ganglia were less marked, but sufficient alteration existed to correspond with the interstitial changes in the kidneys.

The conclusions as summed up by the authors will be sufficient apology for this allusion to the subject here.

1st. That in Bright's disease, especially in the contracting kidney, there exists a constant lesion of the renal plexus.

2d. That while this lesion might be looked upon as forming part of a general process of degeneration in connection with the kidney-disease, we think it is the cause of the renal malady and precedes the degenerative changes.

3d. That the diseased condition of the ganglia furnishes the clue to the alterations of the vessels of the kidneys.

4th. That similar changes producing similar results may exist in other ganglia; for instance, in the cardiac plexus, explaining the hypertrophy of the heart.

Of less general interest, except as a curiosity, is the alleged malady known as

THOMSEN'S DISEASE.†

This has been so named by the Germans after the observer who has not only pre-

* Amer. Journ. Med. Sciences, July, 1880.

† Union Méd., Paris, 1883, xxxvi. 905; also Arch. de Méd. et Pharm., Paris, 1884, iii. 179, and translation in Canada Lancet, Toronto, November, 1884.

sented the most careful study of the subject, but was himself a sufferer from it. Without any known pathology, the disease is manifested by *spasmodic inhibition of the initial acts of automatic or volitional motion.* The observed cases seem to predominate among soldiers, whose accuracy of drill is thus interfered with. This being so, it can readily be seen that our professional brethren of such military countries as Germany and France have opportunities for its study quite beyond any now possessed on this side of the Atlantic.

The cases related include a discharged soldier who was unable to open his fist when he had shut it; when reading, he was often unable to follow out the lines; the movements of the tongue were impeded; dancing and running were prevented. A recruit is mentioned who, in spite of his earnest efforts, was a desperation to his drill-instructors, because of the slowness and sluggishness of his motions in the execution of orders given him. Another soldier, at the command "March!" remained immovable, as if rooted to the ground, subsequently succeeding in rejoining his comrades after sundry disordinate movements of the arms and legs; he was absolutely unable to run, and if he persisted in the attempt he fell; the muscles of mastication, of the tongue, and of the arm were both in-coördinate at the beginning of motion and weak. A case mentioned by Westphal, after a fit of sneezing, could not open the eyes without great effort, and while eating could not always shut his mouth when desired. Other cases are related in which the cramps were not constantly liable, but only followed severe fatigue, continuing several days.

It is stated that there is no pain experienced by the sufferers, but that the contractions are accompanied by a feeling of tumescence of the affected muscles. The muscles are apt to show an increased development, but there is no corresponding increase in power. In all other respects the individuals were in the possession of normal health, no evidence of organic disease being found.

Decided heredity was exhibited in most of the cases, in that of Thomsen thirty-five members of his family being affected with the disease. Of thirteen children of his mother, seven were found to present it.

Hypotheses have been presented by various writers localizing the disease in the medulla, in the cord, in the peripheral nervous system, and in the muscles themselves. The affection is looked upon as incurable.

FRIEDREICH'S DISEASE: HEREDITARY ATAXIA.

A case of this rarely-recognized affection was recently shown to the Philadelphia Neurological Society by Dr. Wharton Sinkler, and notes of another case occurring in the practice of Dr. S. Weir Mitchell were read. Both cases had been for a time under the care and observation of the writer, in connection with the gentlemen mentioned, and their study suggested the probability of this condition being not infrequently mistaken for other forms of sclerosis: hence the propriety of a brief summary in this place of the principal facts so far gathered.*

As distinguishing hereditary ataxia from the more ordinary form of posterior sclerosis, the first feature of importance to be noted is the tendency of more than one member of a family to be attacked by the rarer disease. The relationship may be that of parent, grandparent, or other member of a previous generation; but the more usual occurrence is to find members of the same generation attacked. Another fact of importance is the youthfulness of the subjects of Friedreich's disease, ordinary tabes being most emphatically a disease of middle life. An absolute integrity of sensation may be noted as a third and most important distinction, the lightning pains, constrictions, numbness, delayed sensations, true anæsthesias, and other sensory disturbances of tabes being conspicuous by their absence, with rare exceptions.

The first symptom of this disease is almost invariably ataxy of the lower limbs, a slight awkwardness and clumsiness being for some time the only warning. This becomes worse until decided irregularity of gait exists, and will then most likely be associated with "Romberg's symptom," or static ataxy,—*i.e.*, inability to stand with the feet together and eyes closed. The ataxy of the legs soon spreads upward. In many cases the arms have been attacked very soon after the legs, or at least within a year or two, though in some cases from four to eight years have elapsed.

* For a fuller account, see a critical digest in *Brain*, April, 1884, p. 105.

A true ataxy of speech is the second symptom of importance. This is difficult to describe, but it may be understood somewhat when it is stated that it is a product of ataxy of articulation alone, with no evidences of an involvement of word-memory, or aphasia. The speech is apt to present a sort of drawl that is suggestive of mental impairment; but this suspicion will be found, on further examination, to be quite unjust to the patient. This symptom may manifest itself either simultaneously with the ataxy of the arms or not till many years afterwards. A late phenomenon may be nystagmus, which is bilateral, usually transverse, and is observed only when the patient fixes or follows an object. Patellar tendon reflex is absent. Lateral curvature is frequently present.

Other symptoms than these evidences of an impairment of the co-ordination arc may present themselves, though the various ataxies mentioned are the most striking and common. By a synchronous involvement of the gray matter and lateral columns we may find anæsthesias, paralyses, and contractures. The cases of Drs. Mitchell and Sinkler presented marked evidences of contracture of the extensor muscles of the limbs below the knees; a peculiar attitude of the feet somewhat resembling equinus was thus produced, with the first phalanges of the toes strongly extended and the remaining phalanges passively flexed. The electrical reactions are normal.

The morbid anatomy presents systematic sclerosis of the whole extent of the posterior columns. It is interesting to note that in a number of instances the cords examined were undersized and apparent examples of deficient development.

SOME STATISTICS OF HEPATIC DISEASES.

AN ANALYSIS OF ALL THE CASES PRESENTED TO THE PATHOLOGICAL SOCIETY OF PHILADELPHIA FROM 1857 TO 1881, INCLUSIVE; WITH A DETAILED STUDY OF THE FATTY, THE CANCEROUS, AND THE CIRRHOTIC LIVER.

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THE collective method of studying disease, so much in vogue at the present time, can be resorted to in the study of pathological anatomy by utilizing fully the careful records of the past as well as by waiting for the opportunities of the future. Such studies, however, must be confined to the period which includes the employment of the instruments of precision of the present day.

The writer has been interested for some time in the study of hepatic disease. He had occasion to review all cases of such nature that were reported to the Pathological Society of Philadelphia. The following pages are the result of this study. It embraces not only an analysis of cases of actual disease of the liver, but also a study of the relation of various diseases of the economy to the hepatic structure. The period of time included in these studies is from the foundation of the Philadelphia Pathological Society, in 1857, to the publication of the Transactions in 1881, including the volume of that year.

In the various reports to the Society the condition of the liver was recorded four hundred and thirty times,—one hundred and eighty-four times as normal, and two hundred and forty-six times as having undergone some pathological change. The following classifications show the various affections causing death in which the liver was found to be normal. The first division of the table shows the cases in which hepatic disease would not generally be expected, the second the cases in which hepatic disease is frequently found:

TABLE I.—*Causes of Death, Liver Normal.* (*Total Number of Cases*, 184.)

	Disease or Condition.	No. of Cases.
a.	Accidents and acute inflammatory disease	47
b.	Aneurism and atheroma	11
	Carcinoma of various organs	37
	Tuberculosis and phthisis	21
	Continued fevers	14
	Bright's disease	7
	Gastric ulcer	6
	Ulceration of intestines, including rectum	6
	Organic heart-disease	5
	Pyæmia	5
	Stricture of the pylorus (fibroid)	5
	Cirrhosis of the pancreas	3
	Ovarian disease	2
	Cerebral and renal embolism	2
	Cerebral softening	2
	Cerebral tumor	2
	Cerebral abscess	2
	Addison's disease	2
	Hodgkin's disease	1
	Syphilis	2
	Diabetes mellitus	1
	Purpura hæmorrhagica	1

Now, it was found that not all the cases that were reported and would be classified under subdivision *a* yielded normal livers. In truth, the cause of death being accident, etc., in many cases the liver was found diseased. In other words, hepatic disease was present, not recognized during life and not a secondary condition of the primary disease causing death. The second table briefly indicates the relative frequency of the various forms of hepatic change under these circumstances.

TABLE II.—*Causes of Death Accidental or Acute Disease; Liver Abnormal.*

Disease.	No. of Cases.
Fatty degeneration	15
Congestion	8
Cirrhosis	3
Nutmeg congestion	2
Total	28

It was impossible to analyze these cases, to show the conditions of life previous to the accident, etc., which caused death, which conditions were no doubt the cause of the hepatic disease.

The first table is worthy of fuller study. It is seen that there are many instances in which secondary hepatic change of some kind would be expected, such general or local disease being present. It would be of interest, therefore, to compare the hepatic changes in the more prominent of the primary hepatic conditions in order to show their relative frequency. For this purpose the third table was constructed:

TABLE III.—*Relative Proportion of the Normal to the Diseased Liver (and the Form of Disease) in Various Affections.*

	No. of Cases.	Liver Healthy.	Fatty.	Cirrhosis.	Congestion.	Amyloid Degen.	Anæmic.	Pigment.	Red Atrophy.	Abscesses.	Gumma Syph.	Sec. Cancer.	Tuberculosis.
Carcinoma	83	37	10	4	1	...	...	...	...	...	...	31	...
Phthisis	53	21	18	1	...	2	1	1	...	...	...	...	9
Organic heart-disease	36	5	9	8	13	...	...	...	1	...	...	...	...
Pyæmia	10	5	1	...	...	...	...	...	...	4	...	...	...
Syphilis	10	2	...	2	1	...	...	...	...	...	5	...	...
Bright's disease	28	7	11	7	...	2	...	...	...	...	...	...	...
Fevers	23	14	6	1	2	...	...	...	...	...	...	...	...
Gastric ulcer	8	6	...	1	...	...	1	...	...	...	...	...	...
Ulceration of intestines	10	6	2	1	...	...	1	...	...	...	...	...	...
Diabetes mellitus	4	1	1	2	...	...	...	...	...	...	...	...	...

A closer study of the elements of Table III. presented many features of interest; and, first, the relation of carcinoma to hepatic disease will be considered. The following table shows the relation of hepatic change to the original seat of the disease:

TABLE IV.—*Relation of Hepatic Alteration, and its Absence, to the Seat of Cancer.*

Seat of Disease.	No. of Cases.	Secondary Deposits.	Normal Liver.	Fatty.	Cirrhotic.	Congestive.
Stomach	32	12	14	5	1	...
Pancreas	9	4	2	1	2	...
Intestines	7	1	4	2	...	...
Uterus	7	1	4	2	...	...
Œsophagus	3	...	3	...	...	...
Bladder	3	...	3	...	...	...
Kidney	2	...	2	...	...	...
Peritoneum	4	1	3	...	...	...
Breast	4	3	1	...	...	...
Suprarenal capsules	1	1	...	...	...	...
Mesenteric glands	1	1	...	...	...	...
Parts outside portal area other than breast	10	7	1	...	1	1
	83	31	37	10	4	1

It is at once observed that the ratio of infection of the liver to non-infection is as about five to three, while the ratio of the infected and the healthy livers is almost equal. We would expect, therefore, secondary hepatic carcinoma in about thirty-seven and one-half per cent. of all cases of carcinoma. It was noted that in all cases of secondary metastasis to this organ other glands were involved. The cases were too few to affirm the frequency of metastasis without hepatic involvement. Thus, the liver was normal in three instances of cancer of the stomach and one of the œsophagus in which lymphatic glands were secondarily infected. Remark, too, the frequency of infection from sources outside of the portal area,—one-third of the secondary carcinomas being from that source (breast included). On the other hand, it is seen in what a large proportion of cases of carcinoma within the portal area the liver is not infected.

So infrequently was the variety of malignant disease mentioned that it is scarce worth while to estimate the ratio of metastasis of the many forms. It was learned, however, that the encephaloid carcinoma was more frequently deposited in the liver, the scirrhus next, the epithelioma next, and the colloid the least frequently.

The Liver in Phthisis and Tuberculosis.—Fifty-three cases of phthisis are recorded

in which the state of the liver was mentioned. Phthisis and tuberculosis are taken together, as it is assumed that the former is tubercular. One example of probable non-tubercular phthisis is included,—fibroid. Twenty-one times the liver was found healthy. One-half of the number had gland-involvement, and six of these were examples of general tuberculosis. Of the remaining half, in four the tubercles were diffused in both lungs or other organs, six were localized to one lung. In nine cases the liver was the seat of tubercular deposit, and the same deposit was found to be universal; especially was glandular infection pronounced. It is thus seen that the liver is more likely to remain unaffected when the process is localized, and still more likely to remain so if the lymphatics escape the infiltration. Continuing the series, eighteen times the liver was fatty, twice the seat of amyloid disease, and once each cirrhotic, anæmic, and pigmented. The pigmentation in the latter instance was a coincidence, as it was due to associated malarial disease. The cirrhosis was due to the habits of the patient, and so was also coincident.

Organic Heart-Disease.—The following will show the serious changes which take place secondary to this disease. In fact, there is no other organic disease in which the proportion of healthy to diseased liver is less than in this affection. Five times the liver was normal; nine times it presented the appearance of nutmeg-congestion; four times of ordinary congestion. Nine times it was fatty; eight times cirrhotic; once it had undergone red atrophy.

Pyæmia.—Liver healthy five times; fatty once; the seat of metastatic abscesses four times. In three of the five instances in which the liver was healthy, the lungs were the seat of a purulent deposit. Once only were the liver and lung both affected. Thus each organ is liable to purulent infection an equal number of times, while the ratio of non-involvement to involvement of the liver is as six to four. It is worth adding to these observations that in the two cases of ulcerative endocarditis reported the liver was noted as congested and softened, and in the same number of cerebral abscess as normal, there being other purulent deposits and capillary emboli in the former cases and capillary emboli alone in the latter.

Syphilis.—The relation of this disease to liver-disease cannot be truly expressed by the knowledge derived from the Society records. Thus, twice the liver was healthy, twice cirrhotic (intemperance combined), once congested, and five times the seat of syphilitic gummata, in ten cases of syphilitic constitution or history reported. The proportion is too high for the gumma, and hence, as it was impossible to cull every record for a syphilitic history, the statement must be received with allowance.

The Relative Frequency of Liver-Disease.—This is shown by the following table, and well represents the proportion in this climate.

TABLE V.—*Relative Frequency of Alterations of Hepatic Structure.* (*Total Number of Cases*, 246.)

Variety.	No. of Cases.
Fatty	80
Carcinoma	41
Cirrhotic	38
Congestion	24
Congestion, Nutmeg	13
Abscess	13
Tuberculosis	9
Syphilitic gumma	5
Hydatid disease	4
Rupture of liver	3
Hemorrhage into liver	2
Pigment liver	3
Amyloid liver	2
"Diseased" liver	3
Leukæmic, "atrophied," red atrophy, chronic hepatitis, cavernous angioma, myeloid tumor, one each	6

The various accounts of the cases and the anatomical and histological appearances were so interesting that it was thought a more extended analysis of some of the more important diseases would be of some value. I have, therefore, carefully studied in this way the three most important classes,—the fatty, cancerous, and cirrhotic cases,—the results of which will appear in the second part of this paper.

FATTY LIVER.

Fatty degeneration and fatty infiltration will have to be included in the following summary, as at no time were they separated in any individual report. It is presumed, however, that a fatty infiltration alone was present in those cases in which obesity was an accompaniment; and, as a table is presented showing the proportion of cases in which diminution or increase of

the adipose tissues accompanied the liver-change, there will be no necessity for further reference to the question. The liver was noted as fatty, without any other change, at least any pathological change that exceeded the fatty, eighty times. As the liver was examined four hundred and thirty times in all, it will be seen that about nineteen per cent. had undergone this change. Again, in two hundred and forty-six cases of liver-disease fatty degeneration was found in nearly thirty-three per cent. of all the cases. But then in secondary carcinoma, cirrhosis, and other pathological states the liver was also fatty, and unless this degeneration be due directly to the primary change, as in advanced cirrhosis, etc., in reckoning a percentage the frequency under these circumstances should be included. Thus, in cirrhosis of a slight degree the liver was decidedly fatty three times, in carcinoma of a similar degree eight times, raising the percentage slightly.

The causes of fatty degeneration, predisposing and exciting, will next be considered. And first as to the *age* of the patients. Arranging the cases in decades, we find that the frequency of occurrence is least at the extremes of life. The age of the patient was not given in ten of the cases, thus limiting the number analyzed to seventy. The following figures represent in their order the frequency in each decade respectively, beginning with the first,—3, 3, 10, 14, 13, 14, 9, and 4; total, 70. When it is remembered that the causes of fatty degeneration are more distinctly operative in the middle period of life, it will not be wondered at that the extremes are found so barren. It is interesting to study the age in connection with these causes. Without going into detail at present, we may say that in the first four decades tuberculosis or phthisis was the chief etiological factor eighteen times out of thirty. The well-known cause, intemperance, occurred eight times in forty-one cases, in the fourth, fifth, and sixth decades. As age advanced, tuberculosis gave way to carcinoma as cause, and was found nine times in the sixth and seventh decades.

Sex.—In one case the sex was not given. In the remainder the male sex was noted forty-seven times, the female thirty-two. In the early decades—first, second, and third—the sexes were of equal frequency. In the fourth, fifth, and sixth periods the males were largely in excess (twenty-eight to thirteen). In the last two periods there were nine females recorded to four males. Studying sex in relation to cause, it was found that in the cases of carcinoma the females exceeded the males, in organic heart-disease the males the females; in phthisis the former were slightly in excess, while the cases in which fatty degeneration of the liver was due to the habits of the person were largely male.

Habits.—In nineteen of the cases the habits of the patient were given: in three of them as good, in sixteen as intemperate. Of the sixteen, the habits were considered as the exciting cause in ten; associate disease, together with the habits, in the remainder of the cases. Occupation had scarcely anything to do with the development of the disease, for of the twenty-five males in whom the occupation was mentioned, save soldiers (four) and sailors (six), it was duplicated only three times,—farmer, huckster, and laborer. Or it may be said that twenty-one were laborers or artisans; four only were professional men or merchants. Three of the female cases had served respectively as nurse, dairy-maid, and housekeeper.

Hereditary Influence.—This bore no part whatever in the development of the disease, save in one idiopathic (?) case. In the cases where any such tendency was noted it related more especially to the primary cause of the disease than to the liver-degeneration. The same remarks apply to the presence or absence of a *diathesis* and to previous *diseases*. The latter may be modified in one or two instances, as in two cases that died of pleuro-pneumonia secondary to measles. The former affection in all probability shared in the production of the disorder of the liver. Finally, it was recorded individually that four of the females were married and one single, and that the colored race had but one representative out of the eighty.

Turning to a consideration of those causes which may be termed exciting, or from which the fatty degeneration developed secondarily, it is found that they are numerous as well as variable, but that in the main they corresponded with the testimony of others. In three of the cases the patients died violent deaths and the liver was found fatty. Of course no exciting cause could be determined in these cases. It is possible that the liver was in the transition-period of fatty infiltration at the

time of the accident, as in cases reported by Frerichs. As mentioned above, the habits of the individual were the sole exciting cause in ten of the cases. The associate causes of the six remaining were equally divided between phthisis, organic heart-disease, and carcinoma. This latter disease was a frequent factor in the causation,—ten times. Phthisis and tuberculosis occurred the most frequently, eighteen times in the eighty cases. Organic heart-disease, including pericarditis and dilatation of the heart, was also potent, having been found nine times. The degeneration was secondary to carcinoma nine times. The remainder of the causes—one or two to each reported case—were those which lead to prostration and wasting of the body.

One of the cases I have noted as idiopathic simply because the exact cause cannot be given. It is probable that diet and a personal tendency to fat-infiltration were the exciting causes. The specimens were presented by Dr. Thomas, and were removed by him from a man, aged 40, who died of acute dysentery. The reporter remarked upon the absence of an exciting cause, and laid stress on the influence of the very large liver on the fatal termination of the intestinal disease. Another case is worthy of notice, the origin of which is classed as idiopathic, for the truth of the remarks of its reporter, to the effect that the degeneration preceded the general development of tuberculosis. Presented by Dr. S. Weir Mitchell, his narration of the case was that the male child, aged five and a half years, had died, after six days' illness, from an acute attack of vomiting and purging. The child during life was readily prostrated by a slight catarrh. At the autopsy two or three pea-sized tubercular masses were found at the apex of the right lung, but further than this the only lesions were the extreme fatty degeneration of the liver and a considerable deposition of carbonate of lime in the renal tubules.

Another of the cases is worth placing in bold relief. It is that of a female who had been in the habit of ether-drinking. The heart was found fatty and the aorta atheromatous, in addition to the liver-change, showing the known tendency of this stimulant, used persistently, to cause degenerative changes.

Pathology and Pathological Anatomy.—In none of the reported cases were any remarks made upon the pathology of this disease. The results of this analysis are the only contributions that can be given to this part of the subject, and in the main they bear out the observations of others. It is interesting to read that Dr. Woodward remarked (vol. i. p. 201) that the peculiar color of the skin in the cancerous cachexia may be due to the fatty degeneration of the liver, because of its occurrence only when this alteration is present. Observation does not seem to have confirmed this statement. The cases of Mitchell and Thomas, in relation to etiology, have been alluded to. Some discrepancies appear to exist in the relative frequency of the etiological factors: thus, the male exceeded the female sex (there were eleven males to seven females that died of phthisis in some form). The females, as is well known, exceed the males under the above circumstances, and hence the apparent disagreement with the known facts. When it is remembered that the specimens are derived generally from hospital-patients, and that the males are always greater than the females, this variance is not truly correct.

It is difficult—in fact, some say impossible—to draw the line between fatty degeneration and infiltration, unless cases be followed up and a chemical analysis made. It has been said that in the former instance there is an absence of fat in other portions of the body, while in the latter it is present to a marked degree.

The following analysis of the relation between fatty liver to the presence or absence of fat in other parts of body is presented to throw some light on the question. In twenty-eight cases of the eighty in which any facts were brought to bear on this subject the frequency of each condition was equal.

Fatty Liver with Fat in other Portions.—In the fourteen cases the association of this hepatic change with the deposition of fat subcutaneously or in the mesentery and other organs occurred four times in which the cause of the degeneration was alcoholism, twice each in carcinoma, phthisis, general debility from age, and chronic disease, and once each in organic heart-disease and an acute disease, while in the fifteen cases in which emaciation was striking the cause of the fatty liver differed: thus, five times it was phthisis, three times carcinoma, once each Bright's disease, ery-

sipelas, chronic diarrhœa, diabetes, alcoholism with syphilis, and in two cases of idiopathic origin.

The well-known description of the anatomical appearances—gross and minute—was not departed from in the observations, and it is not worth while to refer to them in this paper, which is to deal with numerical statements chiefly. It may be remembered that in one of the cases the liver was "nearly white, and seemed almost like a mass of tallow." This was the only instance in which such a description was made, and, as it is probably due to the fat being chiefly stearine, is worthy of more extended notice. The patient from whom it was removed died of cancer of the rectum at the age of fifty-nine. In addition to the fat in the liver, there was an "enormous accumulation of fat in the abdomen," and the kidneys were fattily degenerated.

In one of the cases (child, æt. 2, died from pericarditis and pleuritis) the fatty degeneration was noted in curious irregular spots of a very light color on the surface and involving the substance. In a case not included in the table (a boy, æt. 11, dying from peritonitis), the same localized degeneration was noted. These circumscribed changes are said to be due to local alteration of the circulation in the parts. It is difficult to determine the cause of such a change in the first instance. It is strange these isolated cases should be among the youngest. These changes are common in cirrhosis, amyloid disease, carcinoma, etc., of the liver, due to a similar local nutritive disturbance. In the beginning attention was called to the frequency of this association.

Concerning the degree of degeneration, it was recorded as slightly fatty eighteen times, fatty forty-six times, and very fatty sixteen times. The proportion of the cause to the degree varied very much. For instance, take the last class, and it is found that three times in typho-malarial fever, twice in carcinoma, phthisis, and organic heart-disease, and once each in alcoholism, old age, gastro-intestinal catarrh, dysentery, and erysipelas, this extreme degree was noted. Belonging to the same class were two cases, one entered as of idiopathic and the other of doubtful origin. From this it is seen that the degree is not strictly related to the cause, although in deciding upon the degree the personal equation is an antagonizing factor in each case.

The size of the liver was recorded approximately thirty-one times, definitely eight times. Of the entire number, thirty-nine, thirty were classed as enlarged or large, five as very large, two as of the natural size, one as swollen, and one as small. Of the very large class, in three the cause of the degeneration was alcoholism, in one tuberculosis, and one is recorded as idiopathic (Thomas's case). The heaviest liver weighed nine and one-half pounds. The single small liver that had undergone fatty change was removed from a female (æt. 77) who had had jaundice during life and a supposed cancerous tumor in the right hypochondrium. The duration of her illness was seven weeks. At the autopsy an enormous gall-stone (eighty-two grains) was removed from the distended gall-bladder; but it is recorded that there was no obstruction of any duct, and that the heart and kidneys were healthy, the suprarenal capsules markedly degenerated. The cause of the degeneration was probably the jaundice, especially as there was atrophy of the liver.

The size and texture of the *spleen* alternate so frequently with changes in the liver, for obvious reasons, that it will be of interest to scan any related changes. This should not necessarily be the case in fatty liver; and in fact it was not the case, for in every instance in which splenic alteration was recorded it could be explained by invoking the cause of the fatty liver. Thus, it was small in cancer of the rectum; large in diabetes, typhoid fever, and dilated heart; large and soft in organic heart-disease (twice), interstitial nephritis, yellow fever, and a case of general burn; soft and pulpy in yellow fever (one); soft and pale in two cases of measles. On the other hand, the times (nine) it was recorded as normal varied as much as to causation. The frequency of alteration of the kidney was great, its condition being recorded sixty times,—in ten instances as healthy, ten as congested, nineteen as fatty, four anæmic, nine organically diseased (cirrhosis, etc.), three tubercular, one each as amyloid, suppurative, flabby, and "surrounded by fat." The only form of alteration of special interest in this connection is the one recorded as fatty and large. Its frequency shows the ofttimes coexistence of these similar changes in these glands, while the cause, if studied, is found to be a coincident one. Thus,

tuberculosis in six, carcinoma in four, organic heart-disease in five, and intemperance in two cases, and old age and extra-uterine pregnancy in one each, were the exciting causes.

The other organ of the body that undergoes fatty degeneration at the same time that this process is going on in the liver, the heart, has also been studied in the instances in which its condition was recorded, with the following results. Excluding the eight cases of organic heart-disease (two of which were fatty), twenty-four examples are given, which may be classified as normal in five, fatty in twelve, covered with fat in four, and hypertrophied, dilated, and small in one each of them. Of the twelve instances in which the heart was fatty, the kidney was cirrhotic four times, fatty three times, congested twice, not recorded twice, and normal once. The causes of the conjoined cardiac and hepatic change varied very much,—twice each in alcoholism, carcinoma, and tuberculosis, and the remainder of instances in different causes. In no instance was fatty heart recorded in the clinical notes as detected during life.

The symptoms of fatty liver, even when the most pronounced, are so obscured by the more decided symptoms of the primary disorder that it is seldom any clinical note is made of them during life. Hence the paucity of observation in the cases just analyzed. Apart from the note of the size of the liver, made in only a few instances, we can contribute nothing to its symptomatology.

TRANSLATIONS.

PROGRESSIVE ATROPHIC MYOPATHY (myopathy without neuropathy; commencing ordinarily in infancy in the face).—In 1874, Landouzy published an account of two cases of progressive muscular atrophy of infancy, which appeared in the "Mémoires de la Société de Biologie." During the present year the results of further study of the subject in the laboratory of Professor Vulpian, by Messrs. Landouzy and Dejerine, are embodied in a paper published in the *Revue de Médecine*, February and April, 1885. This valuable contribution is illustrated by photo-engraving, showing the progress of the disease in several cases; in one the evolution is shown by a photograph taken after an interval of eleven years from the first of the same patient.

The symptomatology, course, and prognosis of the affection are considered at length, illustrated by numerous cases. As regards the diagnosis, it may be laid down as the rule that, in a given case of muscular atrophy, whatever the age, whatever the duration of the disease, if there is present atrophy of muscles of the face without any symptom whatever of bulbar paralysis, there can be no possible hesitation as to its nature: it is a *myopathic atrophy*. Prior to the appearance of facial atrophy, however, there may arise some difficulty in diagnosis from myelopathic atrophy, when aid will be derived from an examination into the following points:

First. Myopathic atrophy affects muscles individually, and in the sphere of distribution of the same nerve are found muscles absolutely healthy and those absolutely destroyed.

Second. The prolonged conservation of certain muscles,—*i.e.*, supra- and infra-spinatus, subscapular, and the flexors of the forearm.

Third. The absence of fibrillary contractions of the muscles, and the presence occasionally of retractions.

Fourth. Preservation of the tendon reflexes, absence of the reaction of degeneration, and the frequency of heredity.

From pseudo-hypertrophic muscular paralysis it is distinguished by the fact that at no period of progressive atrophic myopathy is observed hypertrophy, either true or false, total or partial, passing or permanent, of a muscle or of part of a muscle. From beginning to end it is *atrophy* of the muscular system which constitutes the only and unique symptom.

The integrity of the central and peripheral nervous system having been established by these investigators, they conclude, after careful study, that the disease consists in a species of primitive alteration of the muscular fibrillæ. From post-mortem examinations it has been demonstrated that this alteration is due to atrophy of the primitive bundles (with or without preceding hypertrophy), and, *as far as the alteration of contractile substance* (sarcous elements) is concerned, the lesion is like that of pseudo-hypertrophic paralysis, but the hypertrophy of the connective tissue is absolutely wanting in the former.

Regarding the two affections as forms of a muscular cirrhosis, the former would be an *atrophic* cirrhosis, the latter *hypertrophic* cirrhosis.

The difference between this progressive parenchymatous muscular cirrhosis and neuropathic atrophies is the difference between a disease and a symptom.

The following conclusions will give a summary of the principal points in this interesting paper:

1. The affection described by Duchenne de Boulogne under the name of progressive muscular atrophy of childhood, and which hitherto has been regarded as being of the same nature as the spinal progressive muscular atrophy of the adult, appears to be a special disease, having nothing in common with the latter except the relations of symptomatological expression.

2. Whereas the latter is neuropathic and spinal in its origin, the former, from its very beginning, is purely muscular. This distinction is made prominent in the name, which separates a *myopathic* malady from one which is *myelopathic*.

3. Clinically, as well as pathologically, progressive atrophic myopathy is a disease entirely special in its etiology, its pathogeny, its symptoms, and its evolution.

4. This disorder (of the facio-scapulo-humeral type) commences most frequently in infancy, in the muscles of the face (muscles of expression). However, it may not appear until adolescence, or even at a more advanced age.

5. When it commences in childhood, the atrophy (of the orbicularis, labialis, and palpebralis) produces a peculiar physiognomy, which is most marked when laughing or crying, the incomplete movements of the lips and immobility of the features contrasting strongly with the animation of the eyes.

6. After appearing in the face in infancy, the malady begins to become generalized by attacking the muscles of the upper extremities, particularly those of the shoulder and forearm.

7. The muscles are affected individually, and not in groups. The supra- and infraspinatus and subscapular, and flexors of the hand and fingers, persist intact almost indefinitely.

8. The affected muscles atrophy from the beginning. There is no antecedent hypertrophy.

9. The muscles belonging to special apparatus (sight, mastication, deglutition, phonation) remain intact during the entire course of the disease. It is the same with the respiratory muscles.

10. The consistency of the muscles presents nothing in particular. In some, however (the biceps among others), there is retraction of the muscular fibres, and contracture.

11. In all cases fibrillary contractions are completely wanting, and the idio-muscular contraction has disappeared, or is greatly diminished and difficult to demonstrate.

12. The electric contractility is only quantitatively modified: there is no reaction of degeneration.

13. Tendon reflexes usually are preserved, even when the muscles are atrophied. In some cases, however, they disappear very early.

14. General and special sensibility, the nutrition of the skin, the cutaneous reflexes, the action of the sphincters, are preserved during the whole course of the disease.

15. The progressive atrophic myopathy of adolescence, as of adult age (more rare than in infancy), *does not always begin with the face*. It may begin with the superior extremities, or more rarely in the inferior. The face is affected consecutively, or it may remain intact. This observation applies whether the case is one of the type facio-scapulo-humeral, or the type scapulo-humeral, or the type femoro-tibial.

16. The evolution of the disease is slow.

17. The lesion consists anatomically in an atrophic myositis, with slight sclerosis, without augmentation of volume.

18. The diagnosis of progressive atrophic myopathy from *spinal progressive muscular atrophy* (type Aran-Duchenne of Charcot, and scapulo-humeral type of Vulpian) is concerned only with the latter type.

a. The face is affected. In myelopathic atrophy the face is never affected; in atrophic myopathy in childhood the face is always affected.

b. The face is not affected. The diagnosis is based upon the indefinite preservation of certain muscles, the absence of fibrillary contractions, the retraction (contracture) of certain muscles, the absence of reaction of degeneration, the preservation of tendon reflexes, the slowness of evolution, and heredity (direct or collateral).

These and other points serve also to dis-

tinguish it from amyotrophic lateral sclerosis.

19. It is distinguished from pseudo-hypertrophic paralysis by the following characters:

a. In atrophic myopathy it is *the rule* that the face shares in the atrophy.

b. In this disease hypertrophy is wanting. In short, pseudo-hypertrophic paralysis is an affection of early infancy, much more common among male children than female, and the patients rarely pass the twentieth year. In progressive atrophic myopathy the disease appears later (*seconde enfance*), in childhood most frequently, but may be observed at all periods of life. The sex is indifferent, and its duration is almost indefinite.

20. It is distinguished from the "juvenile form of Erb" by the participation of the face in the atrophy, the absence of pseudo-hypertrophy, and the frequency, if not the constancy, of heredity, direct or collateral.

The prognosis is grave, but life is prolonged because its course is slow and the muscles of special apparatus are spared (mastication, respiration, etc.).

The pathogeny is unknown. Heredity is the only ascertained etiological factor.

The treatment should be addressed to the building up of the general system, medication, and electro-therapy.

The rarity of the disease is believed to be only apparent. It has been probably more than once misconstrued, because incompletely described and insufficiently studied.

However characteristic may be the physiognomy of a progressive atrophic myopathy, it may be overlooked by an eye which has not been previously instructed: therefore works on semeiology, in the consideration of the face, should recognize the progressive atrophic myopathy of infancy and make mention of the *facies myopathique.*

ANTISEPTIC PULMONARY MEDICATION.—Dr. Dujardin-Beaumetz devotes one of his clinical conferences to the discussion of a subject of present and pressing importance,—the problem of depriving the air of the morbific germs which give rise to infectious disease. After briefly considering the development of the theory of particulate infection, he discusses the pathology of phthisis, adopting Koch's view of the dependence of tubercle upon the presence of bacilli, and claims that experience has demonstrated that even bacillary phthisis is curable by the use of antiseptic agents. Among the remedies most useful in its treatment are medicated inhalations and substances which are eliminated by the pulmonary mucous membrane. The agents used for inhalation are such as iodine, iodoform, eucalyptol, corrosive sublimate, carbolic acid, and, in short, the least irritating of the necrophytic group. For use with the atomizer Miquel recommends

℞ Hydrarg. biniodid., .50;
Tr. opii deodorat., 10.;
Aquæ destillatæ, 1000. M.

Parenchymatous injections of corrosive sublimate have furnished no satisfactory result, and have therefore been abandoned.

Internally, creasote and terebinthinate substances, or those containing sulphur, can be utilized, on account of their elimination from the pulmonary surface; but they are less serviceable than other remedies which act as modifiers of nutrition in such a way as to make the patient's tissues an unsuitable soil for the development of micro-organisms or the culture of bacilli. The favorable influence of altitude in destroying bacilli is mentioned; and the method of Debove, of super-alimentation with meat-powders, nutritious broths administered through a tube, was pronounced sufficient of itself to bring about amelioration and even a cure of tuberculous subjects.

If the discovery of Koch has not yet modified the therapeutics of pulmonary phthisis, it enables us at least to give a scientific explanation of the action of many medicinal agents which we are accustomed to use, and this of itself constitutes a great advantage in therapeutics, but especially in prophylaxis. The fact of the contagion of tuberculosis is now incontestably established, and on every hand sanitarians and physicians are seeking to establish upon a scientific basis the hygiene of tuberculous patients. The progress made in the two years since the announcement of Koch's discovery warrants the hope that a day will come when, better informed upon the mode of development and the existence of the tubercle-bacillus, we shall be in a position to destroy it or attenuate its effects.—*Bull. Gén. de Thérapeutique*, May 15.

PHILADELPHIA
MEDICAL TIMES.

PHILADELPHIA, JULY 11, 1885.

EDITORIAL.

HOT-WEATHER HYGIENE.

A PARAGRAPH in Mr. Stanley's recent work on Congo contains such good advice for those travelling in hot climates that we venture to repeat it. It will be seen that the suggestions are not entirely without application to our own latitude during the almost tropical heat of midsummer. Under such circumstances, the diet, clothing, and habits need to be placed upon a hot-weather basis, and, with such an adjustment of the economy to the environment, the hot weather may really be made less prolific of disorder than the cold. The advice has been to some extent anticipated and its value shown by experience in the management of young children during the summer. Mr. Stanley says,—

"From the moment of arrival the body undergoes a new experience, and a wise man will begin to govern his appetite and his conduct accordingly. The head that was covered with a proud luxuriance of flowing locks, or bristled bushy and thick, must be shorn close; the body must be divested of that wind- and rain-proof armor of linen and wool in which it was accustomed to be encased in high latitudes, and must assume, if ease and pleasure are preferable to discomfort, garments of soft, loose, light flannels. That head-covering which London and Paris patronize must give place to the helmet and puggaree, or to a well-ventilated light cap with curtain. And as those decorous externals of Europe, with their sombre coloring and cumbrous thickness, must yield to the more graceful and airy flannel of the tropics, so the appetite, the extravagant power of digestion, the seemingly uncontrollable and ever-famished lust for animal food and the distempered greed for ardent drinks, must be governed by an absolutely new *règime*. Any liquid that is exciting, or, as others may choose to term it, exhilarating or inspiring, the unseasoned European must avoid during daylight, whether it be in the guise of the commonly-believed innocuous lager, mild Pilsen, watery claret, *vin ordinaire*, or any other 'innocent' wine or beer. Otherwise the slightest indiscretion, the least unusual effort or spasmodic industry, may in one short hour prove fatal. It is my duty not to pander to a depraved taste nor to be too nice in offending it. I am compelled to speak strongly by our losses, by my own grief in remembering the young, the strong, and the brave who have slain themselves through their own ignorance."

THE INTERNATIONAL MEDICAL CONGRESS AND THE PROFESSION.

THAT the work of the committee appointed by the American Medical Association to make arrangements for the International Congress fails to give universal satisfaction, under the circumstances, need surprise no one, but the inference is not warranted that the Congress will not be duly provided for nevertheless. Until the American Medical Association, however, can maintain sufficient order at its meetings to enable it to take a creditable vote upon questions coming before it, it should abstain from interfering further with the arrangements for the International Congress. In fact, for the future it had better leave the matter where it belongs,—in the hands of the American medical profession at large, which can be depended upon to provide the necessary intelligence, energy, and organizing ability to make the Congress as successful as any which has preceded it. If the members of the committee appointed to make the arrangements become hopelessly involved in dissensions among themselves, or if they prove unable to accomplish satisfactorily the task intrusted to them, it will be in order for the profession to move in the matter independently by calling a mass-meeting of the representative men from all sections of the country to confer upon the situation and make all necessary arrangements.

Let a meeting be called at Washington early next fall, in which the several National associations shall be properly represented; let a committee of the profession be then appointed to make the needed arrangements for the entertainment of the International Medical Congress, the committee being free to accept or reject, modify or ignore, the work of the committee of the American Medical Association. Let the principle of natural selection (*i.e.*, the place seeking the man, and not the man the place) govern the committee in making its nominations, and all place-hunters, whether of the early or late committee, be studiously ignored, and the profession at large can be depended upon to give its adherence and support to the undertaking. If this is done, we feel certain that it will be found that the majority of the members of the American Medical Association will sympathize with the movement, and its committee will eventually be forced to co-operate, or will cease to exist from want of moral and financial support.

MEMBERS BY APPLICATION IN THE AMERICAN MEDICAL ASSOCIATION.

ATTENTION is called to the fact that members of State or County medical societies recognized by the Association have now an opportunity of becoming Members by Application of the national organization. The necessary changes in the By-Laws were made by amendment adopted in Washington in 1884, and during the year which has just ended a large number have availed themselves of the opportunity thus afforded. Members by application have the same privileges as delegates, except the right of voting. They retain their membership so long as they remain members in good standing of their local societies and pay their annual dues to the Association.

LEADING ARTICLES.

HAS CHOREA AN ESSENTIAL LESION?

ATTEMPTS have not been wanting to establish a uniform anatomical lesion in chorea minor, and to account on physiological grounds for the disturbing element which is interpolated in the track of a voluntary motor impulse between the origin in the cortex and the final distribution of the nerve in the individual muscles, but hitherto no morbid appearance has been acknowledged as characteristic of the disease. The proximate cause of the peculiar extravagance of muscular movements is recognized by Dickinson in a dilatation of the arterioles of the brain and spinal cord, favoring local degenerations and sclerotic changes; Ellischer finds thickening of walls and diminution of calibre of the cerebral vessels producing local accumulations of blood-corpuscles and serous effusion, and increase of connective tissue with destruction of ganglionic elements; Meynert attributes the symptoms to lesions of the cortical layers; Kirkes and Hughlings Jackson, to embolic processes affecting principally the corpora striata; Bastian regards the plugs not as emboli, but as merely accumulations of leucocytes; several observers, notably Dickinson, have found changes in the gray matter in the spinal cord, most evident in the dorsal region, destructive and sclerotic in character; Ellischer has also found alterations in the nerve-trunks.

Dr. H. C. Wood, in a paper recently read before the College of Physicians of this city, seeks to harmonize these various observations by making the essential lesion of chorea to consist in the alterations in the ganglionic cells, which may be of all grades of intensity up to complete destruction of nuclei and vacuolation. This view is based upon the study of chorea in dogs, in which such changes were found after death in the gray matter of the anterior cornua of the spinal cord. He argues by analogy that similar morbid changes occur in the human subject, and if they are not discernible after death it is because the disease has not progressed sufficiently far to enable us to detect its presence. For him there is no such thing as functional disease, since every modification of function is accompanied by alteration of protoplasm,

even though so slight as to escape detection by our present methods of examination.

A pathology that cannot be demonstrated would by some be considered as belonging to the domain of faith rather than of science: at all events, if changes in the ganglion-cells are not discoverable before the appearance of the other symptoms, their active causative agency may well be questioned. It is not impossible, however, that such changes, when they occur, may be secondary to the morbid action, or even due to the excessive muscular movements.

To our mind, the clinical history of chorea minor negatives the supposition that antecedent organic changes in the nervous system exist, at least in a large number of the cases. The short duration of the disease, the complete recovery, the limitation of the disease to adolescence, the occurrence of unilateral attacks, the disappearance of the symptoms after the removal of a reflex source of irritation (as after abortion or removal of a tape-worm), the cessation of movements during sleep and under anæsthesia, and especially the occurrence of marked cases without any appreciable lesion being found after death, would seem to exclude the idea of any permanent organic lesion in the motor tracts, and especially of such degeneration in the spinal cord in the human subject as the essayist found in dogs.

Chorea is a sensory motor neurosis; but is it not also something more? The mental faculties and moral nature are affected, often before the characteristic movements are evident. The protoplasm of nervous elements is generally acknowledged to be at fault; but is the protoplasm of muscular tissue healthy?

The phrase "insanity of the muscles" at once suggests itself as we stand watching the antics of a choreic subject while endeavoring to make his muscles obey his will; and we cannot escape the impression that it is not alone the nervous system which is at fault.

Without entering into the discussion further, however, it would seem that the happy phrase of Poore in speaking of the muscles in writer's cramp would apply with even more force in chorea. He says the muscles are in a state of "irritable weakness," and this is plainly the case in chorea early in the course of the disease, and may even be recognized previous to its full development. To the hyperkinesis of the mechanism of transmission and of motor co-ordination, in which the essential character of chorea consists, according to Jaccoud, we may add excessive muscular irritability with weakness. There is not much hope, therefore, that any uniform anatomical site may be found for the multiform manifestations of chorea, or even to explain the erratic muscular movements.

Dr. Handfield Jones has well observed that "there seems no more reason for requiring a demonstrable lesion in chorea than in many cases of insanity and delirium tremens, between which and chorea a considerable analogy certainly exists."

It is not denied that nerve-lesions and other organic changes occur, and may evoke choreic symptoms. Upon this point the experiments of Dr. Angel Money upon the experimental production of chorea and other results of capillary embolism, recently read before the Royal Medical and Chirurgical Society, are very interesting and important. Dr. Money's conclusions were that capillary embolism of the spinal cord is the probable cause of chorea in the animals experimented upon; but he contended that any symptom of disease of the nervous system could be caused by capillary embolism. He declares that chorea is due to defective nutrition of certain parts of the nervous system, and that this defective nutrition may be brought about by many means, embolism among the number. The reasons for locating the lesion in the brain in some cases of human chorea are irrefutable. The changes noticed in the ganglionic cells then would be secondary, and the lesion in such cases, up to a certain point, functional and remediable, beyond that point organic and permanent.

F. W.

NOTES FROM SPECIAL CORRESPONDENTS.

PARIS.

TRANSMISSION of Syphilis from a Child to a Wet-Nurse.—Prof. Fournier, treating on this subject in a recent lecture, spoke of how a physician should act when called upon to act as an expert in these cases (which are very frequent in the French courts, owing to the habit the French have of putting their children out to nurse, or of employing a wet-nurse):

"In these cases you must call the woman

to your office, telling her to bring her husband and her child with her. Most likely she will tell you that she entered the family in good health, and that afterwards she noticed a sore on her breast. There are five points to determine:

"1. Is the nurse affected with syphilis or not? This is the base of your inquest, for the simple reason that it is no use in going further if she is not, and the mistake has been made. As a rule, however, it is found that she is.

"2. Is it a chancre of the breast? This is easy to determine. You have only to examine it and the axillary space. If the sore still exists, notice its seat and color and if it has a smooth surface; above all, look to the induration,—that is the capital point. Then explore the axilla, to find the symptomatic bubo. In a word, assure yourself that the lesion is really a chancre of the breast, as that is the key of the whole case.

"3. Does the disease come exclusively from the chancre of the breast? This is important. Examine the lips, the tongue, the genitals, and also the other ganglions, and write it down if nothing else is found.

"4. Is the disease in proper chronological *rapport* as to the date of the invasion with the time she nursed the child? In other words, here is a case: a nurse took a child on the 24th of April, and she pretended to have a chancre on the 4th of May. On examination, chancre was found on the breast, but roseola was noticed, and mucous *plaques* were found in the mouth. Did she get it from the child? No; for two good reasons. First, the degree of incubation is at a minimum of fifteen days; secondly, the secondary symptoms do not manifest themselves for forty to forty-five days afterwards. So you must establish the age of the infection by all the clinical means you have at hand.

"5. Was the nurse clear of it when she took the child? To resolve this question, examine the husband and the child and other children of the nurse, then get the evidence of the doctor who attends the family, who, if he did his duty, should have also examined the nurse before giving her the child.

"Now the case should be complete."

Treatment of Chorea.—Prof. Joffroy, in speaking at the new Hôpital des Enfants Malades on this subject, said, "I do not at all propose to make a critical review of all the medicines that have been proposed to cure this disease, but I will say at once that the principal medication employed at this hospital is chloral, which is combined with packing in the wet sheet. I may say that I believe that chloral is the most powerful *anti-nerveux* that modern therapeutics possesses. In 1879 I first commenced its use here, when I gave it to two of our little patients who were seriously ill with chorea. It will interest you to learn how I employed the remedy. I gave a gramme of chloral every quarter of an hour until I obtained sleep, and when the child woke up I gave it another gramme. In this way it obtained sleep that was interrupted only twice in the twenty-four hours,—just enough to give the patient two meals. After four days in one case and five in the other, I stopped the use of the chloral, not daring to continue it to keep up this profound and continuous slumber. In both of these patients there was a notable improvement. Most of those who have given this remedy have been satisfied with giving it to produce a little quiet or sleep from time to time. Our present method is to let them have it regularly three times a day,—morning, noon, and night,—and keep it up for two weeks, one month, even two months, until they are completely cured. I never had any accident with it, except that once in a while a sort of rubeola or erythematous eruption appeared which did not last more than twenty-four hours, and often disappeared spontaneously, even when the treatment was kept up.

"This uniform method has had for effect a diminution of all the symptoms. I try to give them profound sleep at night, and also after meals during the day. The question of dose is important. Over ten years of age, I order four grammes of chloral in three doses,—one gramme in the morning, one gramme at noon, and the other two grammes at night. In children from six to eight years old the dose is less, and should never go over three grammes. In all cases you must feel your way, and graduate your doses in such a way that you get the sleep in a quarter of an hour after the dose, at least for the dose which you give at night. This mode of treatment must be then continued in a regular way until all the choreic agitation has been suppressed. To have your little patients accept this remedy, which you know has such a disagreeable and penetrating taste, you must disguise the taste. We proceed as follows. Take an aqueous concentrated solution of chloral, pure (nearly four grammes for one of water), and mix it with rather thick gooseberry jelly; make the mixture so that a teaspoonful of it will represent a gramme of the active principle, and they will take it readily as a dessert after their meals.

"You have been able to see yourselves, gentlemen, the good effects of this treatment. Several of our patients have presented a grave form of chorea, and you have seen them go on to cure in a regular way on this treatment being applied. It is quite an important result to be able to suppress at any moment these very violent agitations; and even if there be a regular duration of this disease I believe that chloral will diminish it, so that it really has a curative action. In most of the cases chloral is all that is needed; but when you get a very violent case, with incessant agitation, with wearing of the skin,

then comes the turn of another important therapeutic remedy. I mean the wet-pack. It may even be used in the light cases, but its real indication is found in the severe forms which are accompanied with fever, and where a fatal ending is feared. I give the wet-pack as follows twice a day, morning and evening, employing cold water (10° to 12° C., say 55° F.). Well-water is very good. The sheet is wetted and then slightly wrung out, and then it is spread out on a mattress that is first covered with an oil-cloth. The little patient is then put on it, and wrapped up and rubbed vigorously from head to foot. In one or two minutes, or as soon as the reaction is noticed and the patient commences to warm up, without taking the wet sheet off we roll it over the child several times and cover him up with a large blanket, only leaving the head out, and he is taken to bed: he is left so for half an hour, in a sort of vapor-bath. The effect is excellent. The child feels it at once, and a period of calm and repose follows, often with sound sleep, and when he wakes up he is better already. From these results I think I am authorized to propose the use of chloral and the wet sheet as a method of treatment applicable to most if not to all cases of chorea."

On the Tail in the Human Embryo.—M. Fol, of Geneva, calls the attention of the Académie des Sciences to two human embryos that he has carefully dissected and photographed in sections. There were three hundred and twenty sections, made with great care, and from the facts shown by the eminent *savant* it appears that, without question, during the fifth and sixth week of its development the human embryo is furnished with an incontestable tail.

Artificial Anæsthesia without Sleep.—Prof. Brown-Séquard communicates some new results that he has obtained on this subject. In 1882 he stated that under the influence of irritation of the laryngeal mucous membrane sensibility and pain would disappear in all parts of the body. He showed then that it was by an inhibitory influence exercised by the superior laryngeal nerves over the nerve-centres that this phenomenon was produced, and that it could be made to act on one side of the body only. From a number of new facts that the eminent physiologist has found by experiment, it is proved that common sensibility and pain can be made to stop all over the body under the influence of the irritation of the mucous membrane of the larynx, and without the intelligence or the senses being interfered with.

Poisoning of a Child by its Mother's Milk.—Prof. Brouardel related to the Société de Médecine Légale the following interesting facts, from which he draws the induction that the administration of arsenic to nursing-women should be restricted:

"I was consulted last week on the question as to whether a child of twelve months could have been poisoned by the mother's milk. It seems a man was accused of trying to get possession of his wife's and mother-in-law's fortunes, and he was also suspected of trying to poison his wife with arsenic, and of having caused the death of his child by the same means. The baby had died with symptoms of 'cholerine,' and the mother had suffered at the same time with vomiting and diarrhœa, but, it being then summer, nothing was thought of it. In November, however, suspicion was aroused, as the wife and mother-in-law had renewed attacks of vomiting, and a white powder was found in the man's pocket which proved to be arsenious acid. I had the child exhumed, but it was then six months after death, and we only examined the body *en bloc*, as it was in such a state that the viscera could not be separated. It weighed in all about five pounds, and contained five milligrammes of arsenic. We assured ourselves that this arsenic did not come from the linen nor from the earth around the coffin. M. Gabriel Pouchet then made a number of experiments to see if arsenic was eliminated by the lacteal glands. He gave Fowler's solution to a number of nurses who were in St. Louis Hospital, giving it in doses of from two to twelve drops, and he assured himself that arsenic was always found in the milk in a quantity relative to the dose given. For instance, in one case a nurse who was on eight milligrammes of arsenic showed one milligramme of arsenic for one hundred grams of milk. It must be added that these women were patients who were suffering from skin-disease, and that neither they nor their children showed any signs of disturbance from the drug; but nothing proves that if we could have given it in massive doses the milk would not have been actively poisonous. We then tried experiments on female animals, but with mostly negative results, as they presented such a variable susceptibility to the arsenic. It certainly follows, however, from our experiments, that the lacteal secretion is a mode of elimination that arsenic has a predilection for, and it is prudent not to administer it to nursing-women. In the case mentioned we answered the judges that it was possible that the mother's milk may have been the vehicle of the poison, but that we could not affirm that it was so. The result of the trial was that the husband was condemned to twenty years' hard labor."

Should Keloid Tumors be Operated on?—The Paris surgeons recently have had a very interesting discussion on this subject. At the present moment there are quite a number of these cases to be seen in the Paris hospitals. Prof. Richet operates, but, as a rule, they re-

turn. At the Hôtel-Dieu there is a young man in the service of Dr. Tillaux who has quite a large one of this sort of cutaneous growths, which are called keloid, cancroid, etc. The one in question certainly bears out the name keloid best, as it presents a perfect resemblance to a tortoise-shell in color, size, and shape.

M. Monod said he had presented at the last meeting a child having a large keloid of the neck that came after a burn. Some of his brother surgeons said operate, others said do anything but operate. He requested the opinion of the gentlemen present. For his own part, as there was a pedicle in his case, he should like to operate.

M. Le Dentu preferred not to operate in these cases. He had just seen a case that had been excised by Prof. Richet, and it returned larger than ever. A second operation was followed by the same result. He had begun to treat the case with scarifications. When the keloid is ulcerated it is well to operate, in order to rid the patient of the trouble. Then, if it returns, try scarifications.

M. Reclus mentioned a case at the Salpêtrière of a young woman of 17, having a voluminous keloid of the chin and neck, which had developed itself after a burn. He made compression with emplastrum de Vigo, and at the same time gave salt baths, with cod-liver oil. In a short time (less than two months) she left the hospital with the tumor on the level of the skin and almost cured. Hence he did not think it always wise to operate.

M. Le Fort advised operation in the case of M. Monod's patient, owing to the fact that the tumor seemed movable.

M. Berger operated in 1880 on such a tumor, passing five or six millimetres beyond the trouble, but eight months afterwards it returned larger than it was at first. Recently, with M. Besnier, he had seen a case of one on the shoulder; but this time he tried scarifications, with better results.

M. Verneuil said that it was he who told M. Monod to do anything but operate, because in that case a return is certain. Some keloids are curable when they are in a state of the body that a general treatment will be sustained. There are also some syphilitic keloids that will give way to a specific treatment. He had also seen some of them on the face cured after a course of saline waters and iodine and cod-liver oil. Keloids that are found in arthritics will resist all treatment, and surely return after any operation. He had operated on a number of them without any success. The only thing that presents a chance of success is elastic compression. He had treated a case in this way and the tumor has gone, and he feels confident that the cure will be maintained.

M. Tillaux said that he never operated upon keloids, as they always return.

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Dr. E. Crouzat's Pelvimeter.—At a late lecture of Prof. Charpentier's at the School of Medicine here, he spoke of pelvimeters and showed a sample of the latest. Dr. Crouzat's, he said, was the best ever invented. He condemned all others, of which some eighty had been "committed," he said: even Prof. Pajot had been guilty of one. This new pelvimeter was spoken of in Dr. Charpentier's latest work on obstetrics, but the design given there is not correct. Dr. Crouzat was over two years at work in the studies he made while attempting to obtain a perfect pelvimeter, and he has two interesting pamphlets giving details of his studies. Certainly even a slight examination will show that his invention is incontestably superior to anything that has yet been produced for the purpose. Deformities of the pelvis are common in large cities, at least in the hospitals, from rachitis, etc., so that some more accurate method of measurement is called for than that hitherto employed, even the practised finger of the best obstetrician. In Paris only one finger is used to measure the pelvis, passing it up (having the woman on the edge of the bed) until the finger touches the sacral promontory, then with the nail of the first finger of the other hand a mark is made on the finger introduced, when it is withdrawn and measured, making a deduction for the thickness of the pubis. Elsewhere in Europe they use two fingers, but this is not approved here. Such arbitrary methods of measurement are of little value, and present many errors. It would be very interesting, but would take up too much space in a letter, to give some of the results of Dr. Crouzat's measurements and studies on some hundreds of dry pelves, and his experiments on dead and living subjects made at the "maison d'accouchement" where the doctor was externe; but we will merely say that his instrument is a direct pelvimeter, with a tangent arc at the pubis. It consists of two parts. First, a sort of open tailor's thimble, slit up so that it will fit any finger and allow the finger to pass exactly to the top, on the nail-side, but leaving the pulp of the finger free. This, Dr. Charpentier said, was of great importance, as sensation was preserved. Attached to this thimble by a ball-and-socket joint is a round rod that is marked with millimetre divisions on its outer end. Over this rod passes a small tube bearing two projecting upright tips (one at each end). This tube has an arrangement to stop it at any desired point on the rod and fix it there. The upright tips are of different sizes, and can be changed either end forward. The mode of using the instrument is simple, depending on the size used. The upright tip being placed on the rod, it is drawn back and the tip passed into the vagina, slipping it up in front of the pubis and drawing it back closely. The finger is now introduced into the thimble, and it is carried back and up in the usual way until the sacral promontory is

reached, when all that is necessary to do is to read off the measurement on the end of the rod, without making any deduction.

It will readily be seen that not only the antero-posterior diameter but all the diameters can be measured with such an instrument, as it will swing round on the ball-and-socket joint attached to the finger, so that it will make a circle tangent to the fixed point at the pubic symphysis. Indeed, Dr. Crouzat intends to make some slight modification of it so as to calculate all the dimensions. The introduction of the instrument is quite painless in all multiparæ, and in the primiparæ, where the vaginal canal is not very dilatable, with care being taken to oil it well it was found to pass without giving much discomfort.

It will be noticed that the finger holds and places the pelvimeter, but it does not measure. The measurements are calculated on the sliding rod, after a vast number of experiments to prove them. A number of trials were made with the fingers of some of the best obstetricians here, for comparison with the instrument. Some of the trials were verified on the cadaver afterwards, and in every case the instrument was correct, while the finger made a considerable error.

Treatment of Asthma by Pyridine.—Prof. Germain Sée, with his wonderful talent for work, has a new treatment of asthma of the two forms that he calls "nervo-pulmonary" and "cardiac," by pyridine. In regard to the action of pyridine Dr. Sée concludes as follows, for the two forms of asthma mentioned: "In any form of asthma, if it be primordial and of a gouty or herpetic origin, iodide of potassium is the true remedy. When iodism has come on, then the pyridine finds its sphere, and it ought to be considered as the best means of curing all attacks of iodism; but the iodine is the real remedy. Pyridine is much superior to morphine. Its action in injection is much more durable and very much less dangerous. In asthma of the nervo-pulmonary type the attacks can be made to stop at once by this means. For asthma complicated with grave pulmonary lesions the treatment should be kept up for at least a week, to insure the effect. In cases of the cardiac form pyridine renders great service in preventing that most annoying symptom, the sense of oppression."

Aseptol.—M. Serran has directed attention to this substance. It is a liquid of a rose color, and is also called "acide orthoxphenylsulfurex." It is an antiseptic three times as strong as carbolic acid, and it has no disagreeable odor. It may also be given in quite considerable doses by the stomach without any danger. It is also very soluble in water, and destined, it is thought, to replace carbolic acid in most of its uses, especially for internal administration.

The cholera in Spain and the vaccination operations of Dr. Ferran continue to cause a great deal of talk, but nothing definite can be said in the matter until we get the report of the jury of doctors who have gone to witness Dr. Ferran's operations. At present our medical papers are full of it, mostly crying it down, as they think his mode of culture of the bacillus is open to doubt as to its correctness.

Dr. Noël Guéneau de Mussy, who, owing to his perfect command of English, was well known to Americans in Paris, has just died.

Prof. Brouardel has returned from the International Hygienic Congress at Rome. The Congress does not seem to have done anything wonderful. The disinfectants approved by vote were steam at 100°, acide phénique (carbolic), chloride of lime, and ventilation. They also voted that all vessels coming from contaminated places should have a steam-room for disinfecting purposes.

Treatment of Alcoholism by Injections of Sulphate of Strychnine.—Dr. Dujardin-Beaumetz treats cases of mania a potu by hypodermic injections of the following solution:

℞ Sulphate of strychnine, 10 centigrams;
Aqua destillata, 10 grams. M.

This was given in one case up to one-gramme doses, with cure as a result.

For Bronchial Catarrh:

℞ Acid. carbolic., 0.50 centigramme;
Syrup of mint, 30 grammes;
Aqua destill., 120 grammes. M.

S.—Twice a day a teaspoonful before meals. —(Dr. Chérie.)

THOMAS LINN, M.D.

PARIS, June, 1885.

PROCEEDINGS OF SOCIETIES.

PHILADELPHIA ACADEMY OF SURGERY.

A MEETING of the Philadelphia Academy of Surgery was held June 1, 1885, Vice-President Dr. R. J. Levis in the chair.

EPITHELIOMA OF THE PENIS.

Dr. F. H. Gross: I have here a specimen of epithelioma of the penis, which I removed ten days ago from a man 75 years of age, a widower. One year ago he noticed a small pimple on the glans penis, which was not sore or inflamed. This grew slowly for six months; then it "gathered," to use his own expression, and discharged. It then ulcerated. I amputated the penis ten days ago, going as far back as possible. The glands of the groin were not involved. In performing the opera-

tion, I tied a small rubber band close to the pubes. I then made a circular flap, dissecting the skin from the corpora cavernosa and severing the urethra a little longer than the rest of the stump. I then slit the urethra and attached it to the rest of the skin. There was no venereal history in this case.

Dr. William Hunt: I would ask if there is any foundation for the popular idea that epithelioma of the organ is less apt to return after removal than any other form of epithelioma; and, if so, can any one suggest a reason why such is the case? I have seen cases in which it has returned, but the patients are generally free for a long time.

Dr. S. W. Gross: It is a fact, I think, Mr. President, speaking in a general way, that after removal of the penis for epithelioma the cases are apt to pursue a more favorable course than epithelioma in other situations,—as, for instance, in the rectum. I fancy that the explanation of this is to be found in the free removal of the disease. After amputation of the penis, we are in much the same position as after amputation of a limb for malignant growth. If there is no perceptible lymphatic involvement, and the organ be taken off sufficiently near the pubes, there is no reason why the prognosis should not be extremely good. Many of us can recall cases in which there has been an absolute cure,—this statement being based on freedom from recurrence extending over a period of from ten to seventeen years.

When the lymphatic glands are involved, epithelioma of the penis pursues exactly the same course as in any other organ or tissue of the body.

Dr. J. M. Barton: The clinical fact just referred to is borne out by a recent publication by Partsch, of Breslau. He has undertaken to follow out the results of operative interference in all cases of carcinoma operated on during a period of four years at the surgical clinic at Breslau. So far, he has examined carcinoma of the lip, tongue, vulva, and penis. About twenty-five per cent. of the operations on the lip are complete recoveries, while about fifty per cent. of operations on the penis have the same result. There were, however, only nine cases examined. One interesting fact in this connection was that in one case epithelioma had developed on the glans penis, and subsequently, directly in contact with it, a separate epithelioma developed on the foreskin.

Dr. O. H. Allis: I have seen a case bearing on the remarks made by Dr. Gross. In one case I removed the organ when the disease had progressed nearly to the root of the penis, and I could not get far from the seat of the disease. Here it returned in the course of six months.

Dr. J. H. C. Simes: In regard to the etiology of epithelioma I wish to make a single observation. I saw a case within a month or two in which the penis was largely involved. The patient stated that his wife had died a year before from cancer of the uterus. I do not know whether or not this had anything to do with the causation.

Dr. S. W. Gross: There is one point in connection with the operation which may be of interest. It would possibly be well, before amputating the penis, to inquire a little into the previous history, and determine whether or not the patient has had gonorrhœa. Not that this has anything to do with the etiology, but some years ago, at the Philadelphia Hospital, I amputated a penis for epithelioma in which the disease had made pretty extensive ravages, and removed the organ as close as possible to the pubes. Retention of urine followed. The resident physician introduced the catheter into the bladder with some difficulty. The man had a chill, followed by high fever, and died from urethral fever. The trouble was due to a stricture of the urethra. The autopsy showed surgical kidney on both sides. If the stricture had been detected previous to the operation I should have addressed my attention to it, and habituated the urethra to the presence of instruments before proceeding to amputation.

Dr. R. J. Levis: I would ask if the Fellows know anything about the transition or conversion of ordinary venereal warts into epithelioma. I have had two cases in which the disease followed venereal warts. In one the warts were repeatedly removed. In this case amputation of the penis was followed by return of the disease in the groin. As a rule, epithelioma of the penis occurs about the cervix, corona, and glans, the regions where venereal vegetations principally develop.

Dr. S. W. Gross: There is not the slightest reason why epithelioma should not develop in venereal warts or in the cicatrices caused by their removal.

Dr. Allis: I recall a case, in the Philadelphia Hospital, in which there was extensive condylomata, the patient afterwards dying of epithelioma.

Dr. Barton: It is not uncommon for epithelioma to follow papilloma of any kind, as papilloma of the cheek, where there is no suspicion of venereal origin or of malignancy. In the self-originating papilloma about the face and cheeks, especially in elderly people, it is almost the rule for them to degenerate into epithelioma if left long enough, while the papillomata occurring in children or the venereal warts of the penis of young adults comparatively rarely take on this action. I have seen mucous patches in elderly subjects become malignant and the patient perish from them.

Dr. Levis: In performing ordinary amputation of the penis, I believe that some benefit is obtained by performing what I would call a flap-operation. I first dissect out the urethra, and then make lateral flaps

of the corpora cavernosa, leaving the flaps pretty long. I then draw the corpora cavernosa together, passing the stitches all the way through. I next slit up the spout which I have made of the urethra, and after a time it will become rounded off. I think that by this method something is gained in respect to rapidity of healing.

FRACTURE OF THE PATELLA.

Dr. Levis: I have here a specimen of fractured patella, which illustrates very well the union which takes place. This is the only pathological specimen that I have been able to obtain after the use of the hooks. This case was treated five or six years ago. There is not bony union after healing of the fracture in this case, but the man was active, and walked without difficulty and with no lameness. I have, however, a number of patients walking about in whom I am sure there is bony union. I believe that it is a surgical axiom that a fractured patella can unite only by bony union through a continuity of the periosteum in front. To produce that union some appliance like the hooks must be used. The effect of the ordinary dressings is to tilt the fragments and separate them in front, so that the periosteum cannot unite. In the few instances in which bony union has occurred, there has been this continuity of the periosteum in front. Some specimens show a very slight continuity, and in some cases, where union has not been complete, there have been certain stalactite-projections from one fragment to the other, endeavoring to stretch across.

This specimen shows this gap in front, and it also shows that a patient can walk for a number of years with fibrous union of the fractured patella without any great amount of stretching of the uniting tissue.

This patella also shows that the patella is not a symmetrical bone,—that its upper and lower borders are not parallel,—so that pressure does not act with equal force on both sides, and while there is approximation on one side there will be a gap on the other side. Whenever I have had the opportunity of carefully adjusting the hooks, I have taken care to approximate the fragments on both sides.

I have been repeatedly asked in regard to the irritation produced by the hooks. Except in one case, there has been no great amount of irritation. This case was one in the Pennsylvania Hospital, where I adjusted the hooks myself. On the second night the man was attacked with ordinary delirium tremens, and ran about the ward in a furious manner, and was with difficulty restrained. While running about, the hooks broke, and the man fell. One of the resident physicians gave him ether and took out the hook. There was considerable inflammation about the knee-joint. The patient died from some complication.

Dr. S. W. Gross: This case recalls one which I recently treated, in which I used the apparatus of Agnew, but I think that the hooks would have been better. The fracture was due to direct force, the gentleman being thrown from a sleigh. As a result of treatment, the upper fragment has been depressed and the lower one rides up. On one side of the patella there is close union, but on the other side there is separation of about half an inch. I believe that where the fracture involves the upper portion of the patella it would be better to use hooks than to use the ordinary forms of apparatus, which tend to depress the upper fragment and to allow the lower one to ride up.

I cannot admit the line of reasoning that bone is formed solely from the periosteum. I should think that the periosteum would play a very insignificant part in bony union of the patella. Wherever bone is formed it must come from osteoblasts, and these are present everywhere in bone, in greater or less quantity in different situations. They are present in the soft layer of the periosteum and in the medullary substance of the patella as in other bones, and it is a well-known fact that medulla does produce bone. It was this fact that induced some one to try to insert the medulla between the fragments and bring about bony union. Were the periosteum alone in contact, it seems to me that the bony union would be only on the surface, and that where there is complete bony union between the fragments it is due to the osteoblasts of the medulla.

Dr. Hunt: I think it a truth that where the structures lying beneath a broken bone are of more importance than the bone itself, ordinary union does not occur. In fracture of the skull there is no bone formed. So in the patella there is a fibrous substitute for the bone destroyed.

A great deal of trouble is caused by the attempt to draw up the lower fragment. All that is necessary is to sustain it in position. It cannot be moved upward one-sixteenth of an inch. It is much better simply to sustain it in position than to apply a strong force, which tilts it out of position.

I would like to ask if any one has seen much disability from fracture of the patella. I cannot recall a case in which the patient limped. Of course there are defects, but I do not know that they are any greater than after fracture of other bones.

Dr. Allis: To prevent ultimate separation of the fragments, prolonged rest is, I think, important, in order to allow the tissue to become thoroughly hardened.

Dr. S. W. Gross: Mitchell Banks, of Liverpool, a gentleman of great practical sense, has recently published a work of clinical experiences. In the treatment of fracture of the patella he dwells upon this point referred to by Dr. Allis. Under no circumstances does he allow the patient to use the joint

under seven months. He says that the idea of anchylosis from rest is all nonsense. From this long disuse the functional activity of the muscle must be impaired. Why would it not be well, under these circumstances, to use massage and electricity to develop the muscular fibre and allow the quadriceps extensor muscle to support the joint?

Dr. J. H. Brinton: The question has been asked in reference to the disability following fracture of the patella. I have seen two cases in which there was a marked interval between the fragments, which were separated at least four inches. One of these men played an important part during the war. He was a letter-carrier. He had all the ordinary powers of locomotion, but when he attempted to raise the leg to step up he failed. I think that this is where motion is wanting in these cases. Where there is separation of over half an inch I think that we shall find this disability; at the same time the man may have all the other motions. I believe that where there is fracture on both sides the patient cannot kneel. There is a bishop who is thus prevented from performing the motions peculiar to his office. I also know of a lady who suffers from the same disability.

Dr. Allis: The question arises, Why does the patella fracture? It is seldom fractured in athletes. The fracture usually occurs unexpectedly. The patient steps downward, and, not being prepared for the length of the step, falls. The patella is fractured, and that is the reason the patient falls, and not the reverse. Even if several months are allowed to elapse before the joint is used, I should not be surprised if the patient were lame, because there was a condition of enfeeblement in the limb before the fracture occurred. The fracture of the patella indicates previous weakness, and I should be disposed to give a doubtful prognosis in such cases, as subsequently a second fracture may be produced just above the first one, or in the other patella.

Dr. J. Ewing Mears: I desire to ask Dr. Levis whether in the cases which have come under his observation the fracture was due to direct force or was due to muscular action, and whether or not the method of production had any influence on the union which followed.

Dr. Levis: I do not think that fracture of the patella is often due to direct violence, except from gunshot injuries. I have never seen a fracture of the patella in which there was bruising of the skin over the bone. I have tried on the cadaver to break the patella with a mallet, and I find that it is necessary to batter the skin until it is all gone before the bone is broken.

Dr. Mears: The point which I wish to call attention to is one which is based upon the anatomical relations of the tendon of the quadriceps extensor femoris and the patella. Some anatomists claim that the tendon is inserted into the patella, while others regard the patella as a sesamoid bone developed in the tendon of the quadriceps. It seems to me that we should consider these facts in connection with injuries of this bone and the results of such injuries. If the tendon be inserted into the tuberosity of the tibia and the patella developed in the tendon, the tendinous structures are divided in fracture as well as the bone, and in such a case there will be marked separation, and it will be a more difficult case to treat than if the fracture be the result of direct violence, where the fibres of the tendon may be simply contused and not divided. In treating these cases it is desirable to consider the cause of the fracture.

In connection with the cases which have been described I desire to refer to one under my observation, of a lady with fractures of both patellæ, one occurring subsequently to the other, as so frequently happens. The first fracture was treated very carefully, but there was considerable separation of the fragments. A year subsequently she fell and fractured the other patella from direct force. A curious feature of this case is that while the lady can readily walk up-stairs, she has to come down backwards.

Dr. Brinton: The cause of these fractures can be determined by a study of the articulation. I agree with the view that fracture of the patella is seldom the result of direct force. I have seen it result in this way where the patella has been struck against a largely projecting body. Perhaps in nearly all the cases where the patient falls and the patella is supposed to be broken by direct violence, the fall has little to do with it. Fracture occurs only when the knee is in a particular position. When the knee is bent the patella rises on the condyles and the muscular force acts with a greater degree of power. The injury is often produced by the patient advancing the body to prevent a fall. In this way undue stress is thrown upon the uncovered portion of the patella, which is at the junction of the upper and middle thirds, and the bone is broken.

Dr. Hunt: As a matter of clinical experience, there is one thing bearing upon Dr. Mears's remarks: it is that fractures which are the result of direct force give much less trouble than those due to muscular action.

Dr. Allis: One remark in regard to the case referred to by Dr. Mears. I know of a patient who had double synovitis with displacement of both patellæ for some time. He can walk up-stairs, but comes down backwards. It seems to me that the explanation of this is that in going up-stairs one leg is made a firm support: one leg is straight while the other is lifted. Coming down-stairs, both legs are bent at the same time, and therefore a patient with this condition of the patella cannot come down-stairs face forward, although he can come down backwards.

NEW YORK PATHOLOGICAL SOCIETY.

A STATED meeting was held May 13, 1885, the President, JOHN A. WYETH, M.D., in the chair.

DISSECTING ANEURISM OF THE AORTA.

The specimen was presented by Dr. E. G. JANEWAY, in behalf of a candidate.

FOUR SPECIMENS OF CANCER OF THE RECTUM.

Dr. A. G. GERSTER presented four specimens illustrating different stages of cancer of the rectum. The first patient was a man aged 34, the second a woman aged 54, the third a man aged 64, and the fourth a man aged 65 years. In the first case the patient made a good recovery, and six months subsequent to exsection of the rectum with the cancerous mass a plastic operation was done for incontinence of fæces. The woman died of pneumonia about three weeks subsequent to the exsection of the rectum, and death seemed not to be due to the operation. The third patient had a very narrow pelvis; much difficulty was experienced in performing the operation, and the stitches retaining the stump gave way, the wound became infected, and the patient died. In the case of the other patient his condition did not justify exsection, and consequently the lower end of the gut was split and the cancerous mass scooped out. The relief from symptoms was very marked. In all the cases there had been copious hemorrhage. The wounds after the operation were packed with iodoform. The patients had previously been prepared for the operation by regulated diet and mild cathartics; but, nevertheless, in the aged subjects some trouble was experienced from the passage of hard fæcal masses subsequent to the operation.

In some general remarks Dr. Gerster said that cancer of the rectum was divided into two groups, the epithelial and the adenoid variety. In the former cases the disease was less malignant; it tended to spread superficially and not by metastasis; nor was there danger of early return after extirpation. In the second group the disease was quite markedly malignant; it invaded the deeper tissues, spread by metastasis, and was liable to return after exsection. There still existed a difference of opinion among surgeons with regard to exsection in this class of cases, but Dr. Gerster rather favored it. All of the four cases narrated were of the adenoid variety. Regarding the etiology, in each of these cases the patient had been in the habit of using the syringe daily, and the right hand was employed, directing the syringe towards the left side, the side on which the disease began. Dr. Gerster had also observed that in many cases of ulceration, papillary growths, etc., involving the rectum, the rectal syringe had been used and was regarded as the cause of the disease.

The PRESIDENT said it was ordinarily stated in text-books that cancer of the rectum occurred most frequently in females, but his experience was to the contrary.

Dr. GERSTER had seen twenty-one cases of cancer of the rectum, and this number was about equally divided between males and females.

INJURY OF THE SPINE.

Dr. L. H. SAYRE presented a portion of the upper lumbar vertebræ removed recently from the body of a man aged about 35, who, in the winter of 1881, while driving a wagon, was thrown over the dashboard, sustaining an injury of the spine. He was also exposed to inclement weather at the time. From this date the man began to suffer from pain in the back, extending down the legs, some degree of rigidity of the muscles, etc., symptoms which pointed to some spinal injury. He was sent to Dr. Sayre by Dr. Janeway, who had found signs of commencing Pott's disease and of myelitis. The diagnosis was confirmed by Dr. Sayre, who applied a plaster-jacket and a jury-mast. The case was taken into the courts, and several eminent neurologists testified in behalf of the defendant that there was no injury of the vertebræ, and claimed that the symptoms were altogether due to a myelitis of the cord. Some time before death tubercles developed in the larynx and lungs, and just prior to death the attending physician diagnosticated tubercular meningitis. There had been apparently very slight prominence of the last dorsal vertebra. The autopsy revealed tubercular meningitis, pulmonary meningitis, and tubercles in various portions of the body. There was a pelvic abscess which communicated with two abscesses in the upper lumbar vertebræ. There was no outward deformity of the spine.

Dr. JANEWAY remarked that this case illustrated the fact that the physician could not exercise too great care in diagnosis in cases of railroad accidents and injuries due to like causes. For instance, the physician was liable to make a mistake when he asserted that accidents could not give rise to injury of the vertebræ. In the present case the gentlemen who testified for the defendant not only claimed that there was no injury of the bony column, but they also differed in their view regarding the part of the spinal cord which was affected, some claiming that there was posterior spinal sclerosis, others lateral, and others multiple sclerosis. It was this diversity of opinion among the witnesses for the defendant which resulted in the plaintiff obtaining such high damages.

Dr. GIBNEY had been much interested in the history of the case, inasmuch as he at present had a case under care in which the patient had sustained an injury of the spine,

the symptoms, however, not being very marked or definite. But the case related by Dr. Sayre showed plainly that more serious symptoms might develop after some months.

The PRESIDENT had once effected a compromise between the contending parties in a lawsuit in which the plaintiff had sustained an injury of the spinal column while running an elevator, the symptoms being those of myelitis and fracture of one or more vertebræ. There was paralysis of the bladder and rectum and of muscles of the leg. At present, several years after the accident, the patient was apparently perfectly well.

THE PATHOLOGY OF DEATH FROM ETHER-INHALATION.

Dr. AMIDON had been making some experiments regarding ether-narcosis in the lower animals, and presented the viscera of a cat which had died from ether-inhalation. There was congestion of all the abdominal viscera, collection of blood in the veins and right side of the heart, while the left side of the heart was empty. The point which he specially desired to make was the fact that death from ether was not due, as the books generally stated, to cardiac poisoning, but to respiratory failure. In the present case the right auricle showed contractility five hours after death. In a paper which he had read before the New York Surgical Society he had pointed out the value of atropine in ether-narcosis, and besides this method of treatment artificial respiration should be resorted to. He would not inject ether into the circulation. In several instances in which there was apparent death he had restored life in the lower animals after etherization by opening a large vein or cutting into the liver.

Dr. JANEWAY thought that usually where death had taken place during etherization in the human subject it was due to obstruction of the air-passages by vomited matter. He had on several occasions aspirated the right side of the heart after the organ had ceased beating, death being apparently due to stagnation of blood on that side of the heart. He had not reported the cases, because his experiments had not as yet been attended with success. In one case in which he aspirated the heart while it was still acting, no damage resulted.

Dr. GERSTER said he had once lost a patient during etherization, there having been prior to the operation marked dyspnœa due to a large goitre and to chronic catarrhal process in the lungs. He was unable to revive the patient. The autopsy showed also that there had been some heart-disease. In another case his efforts to produce artificial respiration were attended with success. The operation was for sarcoma of the ribs, involving the pleura, and accidentally, when the pleural cavity was opened, air found unrestrained entrance, causing dyspnœa and apparent death: the heart and lungs ceased to act. Four minutes by the watch elapsed before artificial respiration caused renewed action in the heart, and seven minutes had elapsed before the respiration commenced.

The PRESIDENT remarked that he had once restored respiration fifteen minutes after it had ceased, the time being estimated by a number of by-standers.

NEW YORK ACADEMY OF MEDICINE.

A STATED meeting was held June 4, 1885, A. JACOBI, M.D., President, in the chair.

CONTAGIOUS OPHTHALMIA IN OUR ASYLUMS AND RESIDENTIAL SCHOOLS.

Dr. RICHARD H. DERBY read a paper with this title, which gave the result of his observations in twenty-four institutions visited since his report of the condition of three institutions to the County Medical Society in 1884, and he also urged upon the members the necessity of some step towards preventing contagious ophthalmia from spreading among the inmates of such institutions. In the twenty-four institutions visited there were 7440 inmates, 1428 of whom had sore eyes, or nearly one in every five. It was shown that in those institutions where each of the children had its own comb, brush, towel, bathed separately, and slept alone, and there was plenty of light, ventilation, and healthful food, there were comparatively few cases of the disease, while in those where the children washed in one common trough, used towels and brushes, etc., indiscriminately, a large percentage had the disease. In some it is the custom, when a child has a severe form of ophthalmia, to send it to its parents for treatment outside,—evidently a great injustice, as the parents are often unable to care properly for the child and the disease might be spread to the neighbors. In many cases it becomes an advantage to an institution to receive as many children into its walls as possible, and thus overcrowding is encouraged. Dr. Derby recommended that under no circumstances should a child be received into an institution until a competent physician has examined its eyes, and whenever a case of contagious eye-disease occurs in an institution the Board of Health should see that it is isolated and receives treatment. Not only should the eye-disease itself be treated locally, but the patient should be supplied with food of good quality and in sufficient quantity, and should have pure air. No less precaution should be taken in cases of contagious ophthalmia than was now taken in cases of scarlet fever, measles, etc.

Dr. H. KNAPP said he had listened with deep interest to the statements of the speaker, and they should in no way be underrated. He had been connected with a number of in-

stitutions as ophthalmic surgeon, and knew that in a number of them, and perhaps at certain periods in all of them, contagious ophthalmia existed. Sometimes the spread of the disease had been so great that the authorities of the institutions were forced to close them and to farm the inmates out. But he could, on the other hand, state that in many of the institutions the greatest care was taken to stamp out the disease. He mentioned the Catholic Protectory in particular, where, when an epidemic broke out, they called physicians and sought in every way possible to stamp out the disease, and its spread was largely controlled. But where an institution was once invaded, a number of cases were liable to continue for a long time. Two institutions never admitted a patient with eye-disease until they had received a certificate from him that the disease was not contagious. These institutions were remarkably free from eye-affections. He thought the suggestion of the author of the paper regarding inspection of all cases of eye-disease in these institutions a good one, and believed that if a competent physician were engaged to make a monthly report of the condition of the eyes of the inmates, at least large epidemics would be avoided. In this seemed to be the nucleus of the paper, and he knew of nothing more philanthropic which could engage our attention.

Dr. D. B. St. John Roosa said that this afternoon, at the request of the physician to the asylum, he examined the eyes of two hundred and forty-two inmates of one institution, and found sixty-seven cases of conjunctivitis. These children were under as good care as they could have, thanks to the labors of the author of the paper, except that there was not isolation. But he said the authorities of the institution were not altogether to be blamed for the existing condition of things. If there were any power in the Board of Health to correct such matters, it was its urgent duty to enforce its power. Children suffering from eye-disease were often forced upon the managers of asylums in a manner that they could scarcely resist granting them admission. The writer had observed with great propriety how very wrong it was to send these children back to their already overworked parents or guardians with the hope that they might remedy the evil. The remedy was easy. The tax-payers should pay for a hospital where patients suffering from contagious ophthalmia could be sent and retained until cured and then be returned to the institution without danger of spreading the disease. This subject was one deserving the consideration of political philanthropists, and the Board of Health should insist upon the erection of a suitable hospital, and it would be found, as it had always been found in like cases, that the people of New York would willingly support deserving charities.

Dr. Oakman, of Nyack, said that during the winter the authorities of the institution at that place, where about one hundred inmates were admitted, failed to isolate certain cases of eye-trouble which he advised should be done, they claiming that the disease was the result of cold. In order to keep the inmates warm, they were huddled together in an ill-ventilated room, and the result was that in the spring there were forty-four cases of catarrhal trouble of the eyes; seven patients had acute granular trachoma, and one purulent ophthalmia.

Dr. C. R. Agnew said his interest in this matter began nearly thirty years ago, when he saw a great many cases of contagious conjunctivitis during a famine in Ireland, and to this day the disease was quite common in that country, having started from overcrowding in poor-houses and other public institutions. He referred to a school in this city where contagious ophthalmia was communicated to eight-tenths of the inmates, probably largely by the habit of washing in one trough. They were also insufficiently fed, and several slept in the same bed. A remarkable change for the better took place when they were placed in tents and given four hundred quarts of milk a day instead of fifteen quarts. Dr. Agnew said he had great faith in the effect of agitation in bringing about a reform of abuses, and it was not always wise to go to legislation; but in this case he thought something should be done by the State authorities. It should be required of those who were about to found an institution to lodge a certificate with proper authorities, showing that they had made proper provision for air-space, shelter, food, and medical attendance for a certain number of inmates, and it should be made impossible for such institutions to receive more persons than the number for which they had the lawful accommodations. This was quite as possible as to regulate the number of passengers which a ship of given measurements should carry. The large majority of children in these institutions having chronic conjunctivitis never recovered, and they went to make up that large body of drifting, despairing creatures who infested our towns and cities.

Mr. Gerry, of the Society for the Prevention of Cruelty to Children, explained the manner in which commitments were made to these institutions, and said that, with certain exceptions, many of the institutions where the children were sent were entirely under the control of persons who had no knowledge of medicine or even of nursing, and there was no provision in the law which required them to seek the advice of a physician. Unless they were required to submit to the judgment either of a medical board or of some competent medical man, they would always have in their institutions cases of contagious ophthalmia. He was entirely in accord with

the views expressed by Dr. Agnew, and thought that something should be done by law to provide for an oversight of these institutions by medical authorities. He thought, so far as an ophthalmic hospital was concerned, that the remedy was simple: Let the State pay liberally for the care of such cases, and they would find proper isolation and treatment. The difficulty with regard to the Board of Health was that it was a quasi-political body. It already had its hands too full of work. It had not the means, and when money was asked for it was put off with the reply that it was always calling for money. One objection to an ophthalmic hospital was that the people would feel that as soon as a child was sent there its condition was hopeless.

Mr. MULLER, of the State Board of Charities, explained the duties of that Board with regard to recommending the establishment of institutions organized by private individuals, and said that while such institutions usually started out with favorable conditions, it was only a short time before they began to receive children faster than they were able to provide accommodations for them. Then there were institutions which were considered absolutely safe, being under the highest medical supervision, and yet ophthalmia would break out.

The PRESIDENT said it was apparent from the remarks which had been made that it was almost impossible to keep contagious ophthalmia out of institutions. The same was true of every other contagious disease: they all made their appearance at times in institutions crowded with inmates. All of these institutions were meant to do good, and all did at the same time a great deal of harm. Where there were many children there were many opportunities for danger. Measles usually was a very mild disease, but when it broke out in public institutions it became very dangerous; and the same was true of all contagious diseases. They were more fatal when present among the inmates of crowded institutions. In an eye-hospital a mild case of ophthalmia would become a very severe one, and he was not sure that much good would come from a hospital devoted specially to those cases. The question would finally arise whether public institutions where large numbers of persons were accumulated would be allowed to exist at all. If the children gathered in those which at present existed were farmed out, it would be much better for them.

Dr. W. F. MITTENDORF said it was difficult to make the public understand two points with regard to contagious ophthalmia: first, its great danger to the eyes, and, second, the length of time it required to cure it. He had had much to do with asylums, and he thought with the President that the crowding of children together in institutions was a great source of danger. In certain institutions where the inmates lived in cottages he had seen little of eye-disease. Another point which was too often overlooked was the extreme contagiousness of the affection. It was because of its great liability to spread that the eye-institutions in the city did not like to accept cases of contagious ophthalmia into their wards. The suggestion of the President was, it seemed to him, the best that could be adopted,—namely, to put as few inmates into one building as possible.

Dr. AGNEW offered the following resolutions, which were unanimously adopted:

"*Resolved*, That it is necessary and expedient that steps be taken to prevent the occurrence of communicable eye-diseases in schools and asylums of New York and vicinity.

"*Resolved*, That the Council of the Academy be requested to take the matter of the paper into its immediate consideration, to obtain the co-operation of the writer of the paper, of the Society for the Prevention of Cruelty to Children, of the State Board of Charities, of the State's Charities Aid Association, and others interested in the subject, for the purpose of lessening the prevalence of communicable eye-disease."

Dr. ROOSA wished to say a word or two in favor of the hospital plan, which had been pretty generally criticised. He still thought that, taking things as they were, and not as they would be in Utopia when we should get all the children farmed out among benevolent Christian people, it was best to isolate the cases of contagious conjunctivitis found in our institutions and give them suitable treatment, which could best be done by having an ophthalmic hospital to send them to. So long as the institutions existed there would be cases of ophthalmia, and it was desirable that such cases should be separated from the healthy inmates. Such patients stood a very fair chance of being cured when properly cared for.

Dr. R. P. LINCOLN then exhibited a new electric laryngoscope and otoscope and illuminator of dark cavities, invented by Dr. Starr, of Philadelphia; also a convenient storage-battery. The instruments he had found to be the most convenient of any which he had employed.

Dr. JARVIS raised the question of priority.

OPEN-AIR TREATMENT OF DIPHTHERIA.—Dr. Bontecou writes to the *Journal of the American Medical Association*, advocating the open-air treatment of diphtheria, and locally dilute chlorine water, with compound tincture of iodine added, to the fauces, and internally drop doses hourly of glycerin (p. 2), iodine, acid. carbolic. (each 1 p.), the patient lying in the prone position. There is no danger of the patient's taking cold.

REVIEWS AND BOOK NOTICES.

A MANUAL OF DERMATOLOGY. By A. R. ROBINSON, M.B., L.R.C.P. Edin., Professor of Dermatology in the New York Polyclinic, etc. New York, Bermingham & Co. 8vo, pp. 647.

"This volume is intended to be the basis of a future much larger, more pretentious, and more original work." So says the author in his preface, and we can only hope that his intention may be happily carried out at no distant day. For, as Dr. Robinson is known as one of the most original investigators in the histology of skin-diseases in this country, the more of his own work we have the better will it be for the renown of American dermatology. That portion of the present compendious work which deals with the pathological histology of skin-diseases is the best and most interesting. The rest is very much like other compilations. What the author set out to do—namely, "to present to the subscribers of Bermingham's Medical Library a concise account of our present knowledge of the subject of dermatology"—has been well and conscientiously done, but without evident enthusiasm. The book bears, to our mind, too much the impress of the German school. A more independent and eclectic spirit is desirable in an American work. Dr. Robinson is very severe on the classification of the American Dermatological Association, of which he says that it "should not have seen the light." After such an assertion, we are surprised to find that Dr. Robinson's classification is, with few exceptions, practically the same! A casual comparison would make them identical, but closer inspection reveals differences which we cannot believe of vital importance. A. V. H.

A TEXT-BOOK OF HYGIENE. A COMPREHENSIVE TREATISE ON THE PRINCIPLES AND PRACTICE OF PREVENTIVE MEDICINE FROM AN AMERICAN STAND-POINT. By GEORGE H. ROHÉ, M.D. Baltimore, 1885. 8vo, cloth, pp. 324.

This treatise on hygiene has been prepared with the aim of placing in the hands of the American student, practitioner, and sanitary officer the principles of preventive medicine. It is very appropriately dedicated to Prof. H. I. Bowditch, "the pioneer in the field of preventive medicine in America." The topics discussed are, first, the air, water, food, soil, removal of sewage, construction of habitations, hospitals, and schools; secondly, industrial, military, marine, prison, and personal hygiene; thirdly, the germ-theory of disease, contagion and infection, history of epidemic diseases, antiseptics and disinfectants, and disposal of the dead; and, finally, quarantine and vital statistics.

The author of this text-book is to be congratulated upon the success of his undertaking. Although aiming to furnish in compendious form the principal facts of sanitary science from an American stand-point, it must not be inferred that he has confined himself to American authorities. On the contrary, a careful examination shows his familiarity with recent literature of hygiene, and we find the latest knowledge upon the subject is communicated in brief and direct terms. The book is well written, concise, and comprehensive, and its teachings are based upon sound principles and good practice. In a subsequent edition more attention might be given to the presence of disease-germs in the soil of cemeteries (notably the observations of Dr. Domingos Freire regarding cryptococcus xanthogenicus), cemetery-drainage as a source of contamination of water-supply, mushroom- or sausage-poisoning, and poisonous coloring-matter in candies.

THE PHYSICIAN HIMSELF, AND WHAT HE SHOULD ADD TO HIS SCIENTIFIC ACQUIREMENTS IN ORDER TO INSURE SUCCESS. By D. W. CATHELL, M.D. Fourth Edition. Baltimore, 1885.

The success of this little work by Dr. Cathell shows that he did not err in supposing that an essay on personal questions in medical practice would be of decided benefit to numerous members of the profession. The subjects treated are those of every-day experience, and the advice given is temperate, timely, and trustworthy. Every young practitioner would be made a wiser—not necessarily a sadder—man by reading it, while older ones will find in its pages a reminder of some of the difficulties which they encountered unaided in their early experience. In preparing this edition, opportunity has been improved of revising and adding to its contents. We regret that the advice given on page 123 was not expunged, as it approaches quackery too nearly. We should avoid even the appearance of evil. However, it is not surprising that some parts should meet with criticism: the wonder is that there is so little to condemn amid so much to praise. It is handsomely printed on good paper with clear type, and is a very readable book.

GLEANINGS FROM EXCHANGES.

PATHOLOGY OF DIABETES MELLITUS.—In a paper entitled "Some New Considerations on the Pathology of Diabetes Mellitus," Dr. William H. Porter (*New York Medical Journal*, April 11) discusses the microscopic changes of the glandular organs removed from a diabetic subject, which suggest a new view of diabetes. The starting-point of the disease may be considered as excesses in eating, by which is meant such a physiological increase in the nutritive material,

both hydrocarbons and proteids, as to keep the liver-cells constantly overworked, thus exciting a condition which renders them incapable of performing their normal work. Glycosuria has been produced by overcharging the portal blood with glucose or cane-sugar. Pavy showed that the injection of oxygenated blood into the portal circulation leads to a superoxygenation, which apparently increases the amount of work on the part of the liver, and is followed by glucose in the urine; and Schiff excited the same condition by galvanization of the liver.

From these observations Dr. Porter is led to suggest that "the excessive imbibition of nutritive elements into the portal circulation must of necessity call for a super-oxygenation of the portal blood; and in this way additional work is called for on the part of the hepatic cells; consequently the capillaries are dilated to furnish the necessary material to carry on the excessive metabolism; and in this way this peculiar disease may be and is developed by material processes as well as experimentally. It may be that the increased demand made upon the liver is transmitted by the sensory filaments of the sympathetic to the hepatic medullary centre, which produces either deficient or excessive stimulation, as the case may be, with a like result transmitted back to the liver, which is followed by incomplete or undue activity on its part, instead of just the requisite response and a complete metabolism."

Cerebral lesions may also in some cases interfere with the nervous mechanism of the liver, and bring about the same changes in the capillaries and hepatic cells resulting in incomplete or excessive transformation in the liver; but traumatic diabetes tends to recovery, whereas there seems to be a necessity for surcharging the portal system with nutritive materials in order to produce permanent diabetes. The glycosuria of pregnancy or of lactation is attributed to peripheral circulation.

The frequency of the renal lesion in diabetes, and the absence of excess of sugar in the blood at a recent necropsy, suggest the view that glucose is not produced and discharged as such into the blood from the liver, but that sugar-forming elements are produced which circulate in this incomplete state in the blood, and so on through the kidney, where they are acted upon by the renal cells and discharged as fully-formed glucose. The result is a neurotic condition of the renal epithelial cells, and parenchymatous metamorphosis, due to excessive amount of work. This also explains the condition of the kidneys in old cases, which are usually attended with albuminuria and casts. The small amount of albumen may be explained upon the theory that some if not a considerable quantity of the glucose is produced from the albuminurias, and that the sugar represents what otherwise would be eliminated as albumen, urea, carbon dioxide, and water. The copious amount of urine is attributable to the close relationship existing between the sympathetic nerves of the liver and kidneys, thus explaining the primary dilatation which is maintained by subsequent vascular degeneration, which destroys the elasticity of the vessel-walls. The result is that all power of regulating blood-pressure upon the glomeruli is removed, and the increased hydrostatic pressure forces a very large quantity of water through. This vascular degeneration and dilatation are found in both the liver and the kidneys. The practical points of interest in this communication are that diabetes mellitus has for its primary cause a change in the portal blood and in the hepatic tissue and vessels; that the influence of the nervous system is secondary and not primary. The line of treatment, therefore, should be to reduce the amount of work thrown on the liver, by regulating the diet. The circulation should be steadied so that vascular tension shall be kept as even as possible, and the nervous system should not be neglected, but treated symptomatically, in order to keep it as nearly normal in its functions as possible. When treatment is instituted early, good results may be hoped for.

JAUNDICE FROM ARSENICAL WALL-PAPERS.—In the *British Medical Journal* (June 20) are reported six cases of jaundice among the children of one family, ranging in age from 9 to 18 years. The symptoms began acutely with vomiting, furred tongue, tenderness in the epigastric region, and icterus, all of which passed away in from one to two weeks. It was found that the paper on the walls of the playroom and dining-room contained in its pigments a large proportion of arsenic.

MISCELLANY.

THE NEW JERSEY STATE MEDICAL SOCIETY held its One-Hundred-and-Nineteenth Annual Meeting June 9, at Long Branch. The officers elected for the ensuing year are:

President,—Joseph Parrish, M.D., of Burlington.

Vice-Presidents,—Charles J. Kipp, M.D., of Newark; John Ward, M.D., of Trenton; H. Genet Taylor, M.D., of Camden.

Corresponding Secretary,—William Elmer, Jr., M.D., of Trenton.

Recording Secretary, — William Pierson, M.D., of Orange.

Treasurer,—W. W. L. Phillips, M.D., of Trenton.

Standing Committee,—I. J. Smith, M.D., E. J. Marsh, M.D., D. C. English, M.D.

The next annual meeting will convene at Spring Lake on the second Tuesday in June,

1886. Dr. D. McLean Forman is the chairman of the Committee of Arrangements.

THE CHOLERA IN SPAIN.—Accounts from Spain tell of an alarming increase in the number of cases of Asiatic cholera, especially in the province of Murcia, where the people are said to be especially ignorant, bigoted, and dirty. The papers also state that the officers of the Sanitary Board, in making house-to-house visitation, in using disinfectants, and trying to promote cleanliness, are meeting with great opposition. Dr. Ferran, on the contrary, is continuing his alleged protective inoculations upon increasing numbers in Valencia. These inoculations are especially attractive to those who wish to be assured against cholera, and yet do not care to take the necessary trouble to put their persons or their homes in proper hygienic condition. The fact that cholera is neither contagious nor self-protective, and that its pathogenic cause resides in the intestine and not in the blood, so far as has been ascertained, would seem effectually to forbid any hope that it is a disease from which immunity can be obtained by inoculation. It is more likely that such injections would cause septicæmia than that they should either originate or prevent attacks of true cholera.

NOTES AND QUERIES.

Dr. E. G. Waters, of Baltimore, Maryland, writes us an interesting note concerning the frequency of paracentesis for ovarian disease. He refers to a lecture published in the *Times* under date of October 4, 1884, in which Mr. Tait is represented as saying, "I remember that I saw in the county of Hants a tombstone that bore an inscription declaring that the deceased had been tapped for ovarian dropsy forty-seven times. Being on a tombstone, of course it must be true; if so, this is the largest number of tappings on record." * * *

"This is an extraordinary statement for so eminent a man to make, and must be considered chargeable to that form of *hiatus animi* which so constantly occurs to speakers unpractised in giving expression to their thoughts, as Mr. Tait tells us he actually was. Reference to the 'Practice of Medicine' by his distinguished countryman, Sir Thomas Watson, under the head of Ovarian Dropsy, furnishes the two following 'recorded' instances, each of which exceeds the case he gives in the number of times this operation was performed:

"'Dr. Mead narrates the case of a lady who, for the information of posterity, ordered by her will that the following English inscription should be engraved on her monument in Bunhill Fields:

"'Here lies Dame Mary Page,
Relict of Sir Gregory Page, Bart.
She departed this life March 4, 1728,
In the 56th year of her age.
In 67 months she was tapped 66 times; had taken away
240 gallons of water, without ever repining at her
case or ever fearing the operation.

"'Among authenticated instances, the most remarkable that I have met with is detailed in the *Philosophical Transactions* for 1784, by Mr. Martineau, who was at the time surgeon to the Norfolk and Norwich Hospital. An abstract of the case is given in the printed catalogue of the Hunterian Museum, where the cyst is preserved. It belonged to the left ovary of Sarah Kippus, a widow, 55 years old.

"'The complaint began after a miscarriage at the age of twenty-seven. From the year 1757 to August, 1783, when she died, she had been tapped eighty times, and had in all had taken from her 6631 pints of fluid, or upwards of thirteen hogsheads.'

"The subject is chiefly of literary and historical interest, but from these points of view is not without value. An esteemed professional brother who is always abreast with current medical literature said to me the other day, 'It's of no use to read old medical books. Time is thrown away in reading them.' Yet it is very evident from the above illustrations that timely references to them may sometimes save very able men from rash assertions."

[We are not certain but that the statement commented upon was a *lapsus* on the part of the reporter in making a positive assertion of what was merely intended as a passing remark, which unfortunately was overlooked by the lecturer in making a hasty revision of the proof just before sailing for England. The remark that Mr. Lawson Tait was not accustomed to medical teaching does not warrant the inference that he is not a practised speaker. On the contrary, he has had much experience in public speaking, although not as a clinical lecturer.—ED. TIMES.]

OBITUARY.

DR. EDWARD HARTSHORNE, a prominent member of the profession of Philadelphia, died at his residence, of nephritis, June 22. He was born in this city, May 14, 1818, and was the son of Dr. Joseph Hartshorne. Dr. Hartshorne graduated at Princeton, and afterwards received his medical degree from the University of Pennsylvania. He was connected at different times with the Pennsylvania, Episcopal, and various army hospitals, and was an active and devoted member of the College of Physicians. He was also connected with a number of special societies like the Philosophical and the Academy of Natural Sciences.

OFFICIAL LIST

OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT U.S. ARMY FROM JUNE 21, 1885, TO JULY 3, 1885.

MAJOR ALBERT HARTSUFF, SURGEON.—Assigned to duty at Fort Hamilton, New York Harbor. S. O. 133, Department of the East, June 24, 1885.

MAJOR J. V. D. MIDDLETON, SURGEON.—Granted one month's leave of absence, with permission to apply for fifteen days' extension, to take effect about July 15. S. O. 88, Department of Missouri, June 19, 1885.

MAJOR H. E. BROWN, SURGEON.—Assigned to duty as post-surgeon, Fort Reno, Indian Territory. S. O. 91, Department of Missouri, June 24, 1885.

CAPTAIN F. C. AINSWORTH, ASSISTANT-SURGEON.—Relieved from duty at Headquarters Department of Missouri. S. O. 93, Department of Missouri, June 26, 1885.

CAPTAIN B. D. TAYLOR, ASSISTANT-SURGEON.—Assigned to duty at Little Rock Barracks, Arkansas. S. O. 139, Department of the East, July 1, 1885.

CAPTAIN BLAIR D. TAYLOR, ASSISTANT-SURGEON.—Ordered from Department of Texas to Department of the East.

CAPTAIN WILLIAM F. CARTER, ASSISTANT-SURGEON.—Ordered from Department of the East to Department of Texas.
S. O. 141, A. G. O., June 20, 1885.

CAPTAIN WILLIAM B. DAVIS, ASSISTANT-SURGEON.—Leave of absence extended three months. S. O. 142, A. G. O., June 23, 1885.

FIRST-LIEUTENANT R. G. EBERT, ASSISTANT-SURGEON.—Granted leave of absence for one month, to take effect about July 5. S. O. 97, Department of Colorado, June 17, 1885.

FIRST-LIEUTENANT R. L. ROBERTSON, ASSISTANT-SURGEON (now on leave of absence).—Directed to report in person by July 7, 1885, to commanding officer, Columbus Barracks, Ohio, to accompany detachment of recruits to Department of Texas. On completion of this duty, to rejoin his proper station. S. O. 143, A. G. O., June 24, 1885.

LIST OF CHANGES IN THE MEDICAL CORPS OF THE U.S. NAVY FROM JUNE 21, 1885, TO JULY 4, 1885.

BRANSFORD, JOHN F.—Commissioned as surgeon on active list, June 16, 1885.

ROSS, J. W., SURGEON.—Detached from Naval Laboratory June 30, 1885, and waiting orders.

SHAFER, JOSEPH, ASSISTANT-SURGEON.—For duty on board the U.S. Receiving-Ship "St. Louis," League Island, Pennsylvania, July 10, 1885.